

Branded: How Mental Disorder Labels Alter Task Performance in Perception and
Reality

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in the Department of
Sociology in the Graduate School
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2013

ABSTRACT

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Abstract

Extensive evidence demonstrates how mental illness symptomatology can inhibit perceptions of and actual performance on important tasks. However, receiving treatment from the medical establishment for such symptomatology requires diagnosis, whereby the patient becomes labeled and subject to the stereotypes connected to that label. Mental illness labeling is associated with a variety of negative outcomes including inhibited access to unemployment, housing, health insurance, and marriage and parenthood opportunities and can disrupt interpersonal relationships. However, the repercussions of mental illness labeling for one area of life have remained largely overlooked; that area is task performance. Adults spend a substantial portion of their lives at work engaged in group-based or individual level tasks. This dissertation explores external perceptions of mental illness in task groups and the role of self-internalization of stereotypes about mental illness in individual task performance through two experimental studies.

Previous research has revealed that, on average, task partners with a mental illness are stigmatized and subject to diminished status when they are identified to participants as having been hospitalized for general psychological problems for an extended period of time. Study 1 of this dissertation explores the stigma- and status-

based attributions triggered by engaging with a partner in a mutual task who is identified as having a specific mental illness label: none, Generalized Anxiety Disorder (GAD), Major Depressive Disorder (MDD), Attention-Deficit/Hyperactivity Disorder (ADHD), or schizophrenia.

Additionally, research has revealed that members of a group about which negative stereotypes exist may face a situational threat in a domain relevant task—stereotype threat. Race, gender, social class, age, and a variety of other sociodemographic attributes can trigger stereotype threat. However, little research has considered the potential for stereotype threat to emerge on the basis of mental illness labeling. Study 2 of this dissertation focuses on individual-level performance, exploring the potential for ADHD to trigger stereotype threat in test-taking situations.

Results from Study 1 suggest that the specific mental illness labels studied, presented devoid of symptomatology severity, do not trigger stigmatized attributions but may trigger some negative status attributions in the case of a task relevant diagnosis. (ADHD). Study 2 suggests that a task relevant diagnosis may also trigger stereotype threat in a test-taking situation, negatively impacting performance. Taken together, the results indicate that task relevance of one's mental illness label may be a driving factor in negative external and internal perceptions of mental illness.

Dedication

To my best friend and the love of my life, Caity DiSanza. Your intellectual curiosity keeps my own afire, and your belief in me sustains me.

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Acknowledgements

This research would not be possible without the generous financial support of the National Science Foundation, the Duke University Department of Sociology, and the Graduate School at Duke University.

I have benefited from the mentorship and support of many friends and colleagues over the years who have inspired and challenged me. First, my great thanks go out to the members of my committee. Linda George is the consummate scholar—generous with her time, honest with her constructive criticism, about as quick-witted as anyone I know, and reliable even when called upon at unconventional hours. I have enjoyed the back and forth e-mails over various projects in the middle of the night when we both always seemed to be working. Lynn Smith-Lovin never met a mountain she couldn't climb and is always the one lowering the rope for others to join her. Whenever it has seemed like anything important was impossible, she has consistently been the one to not only prove otherwise but to provide the tools necessary to succeed. From her grant-writing information sessions to her facilitation of social psychology workshops, she has frequently gone out of her way to help. I still remember when I gave my first major conference talk and looked out to see that she was there in the audience with encouraging and helpful feedback. Professionally and personally, I could not ask for

better co-chairs. I also have appreciated the hard-hitting but fair feedback of Debby Gold and Ken Spenner, both of whom have a wealth of knowledge to share.

Although not on my committee, other faculty members and staff at Duke have also been important. I have had the pleasure of many long talks about sociological theory and life with Ed Tiryakian who gave me the benefit of the doubt and my first job at Duke. I don't think I really understood what deep, critical thinking was before I took a class with Eduardo Bonilla-Silva during my first semester of graduate school, and I get so much more out of everything I read now because of it. His book *Racism Without Racists* drew me to sociology, and it still shapes my worldview. I thank Linda Burton for sitting me down during my first year and helping me figure out the connections between my interests in sociology as well as for introducing me to the world of ethnography. Becki Bach gave me my first opportunity to teach and encouraged me throughout the process. Keith Meador played a significant part in cultivating my interests in religion and health. I also greatly appreciate all of the support I've received from Lisa Young, Jessica Ellington, Theresa Shouse, and Rob Marks.

My fellow graduate students have been a constant encouragement over the last 6 years. I especially thank Wendy Young, Steven Frenk, Cyrus Schleifer (the only person I

know who can look smug while driving a scooter), Kim Rogers, Victor Ray, Jake Fisher, Andrew Miles, Melanie Sereny, and Heather Rackin for their friendship.

Finally, I want to thank my family to whom I owe a debt of gratitude that cannot be repaid. My parents, Richard and Cindy Foy, have never wavered in their care or their love and provided me with a strong foundation. Melissa Foy is my younger sister, but I have always looked up to her for her strength of conviction and her truth to herself. Thank you also to my grandparents, Larry and Betty Foy and Kerry and Pat Lushbaugh, whose involvement in my life is a joy and a privilege.

1. In the Aftermath of Medicalization: Implications at the Intersection of Mental Health Labeling and Task Performance

“Where you thought your friends were just having normal troubles, the developers of the American Psychiatric Association’s diagnostic bible raise the possibility that you are surrounded by the mentally ill. Equally disconcerting to you, you may be among them.” (Kutchins and Kirk 1997).

An experienced malady is not inherently a medical problem; it must be defined as such. Medicalization, or the process by which formerly non-medical problems become seen as medically treatable, continues to expand (Conrad 2007). The deviance of earlier times has given way to diagnoses like alcoholism and Attention-Deficit/Hyperactivity Disorder (ADHD). Even widespread aspects of human existence once viewed as natural and largely unavoidable have become subject to medical attention from childbirth to menopause and erectile dysfunction (Conrad 2007). Perhaps no area has proven more fertile for the seeds of medicalization than that of mental health.

Prima facie, the expansion of medicalization provides several clear benefits to mental health patients, such as access to information about their symptomatology, treatment, and educational and occupational accommodations (U.S. Department of Justice 2009; DeSantis et al. 2008; Broom and Woodward 1996). However, these benefits

often come with a cost enacted by stigma and paid in the jeopardizing of relationships, health, and material wealth (Link et al. 2001; Wahl 1999; Link et al. 1997; Link et al. 1991; Link et al. 1989; Link 1987; Sibicky and Dovidio 1986; Mor et al. 1984; Farina et al. 1971). This dissertation aims to extend our understanding of that cost in the context of task performance, or “the core technical behaviours and activities involved in [a] job” via two studies (Griffin, Neal, and Neale 2000). The first study examines how knowledge of a task partner’s mental illness label impacts one’s perceptions of the partner’s performance in a task group situation. The second study considers how one’s personal performance on a task is impacted by awareness of the stereotypes surrounding his or her own mental illness label.

This chapter sets the stage, providing an overview of the medicalization of mental illness, describing some of the benefits and downsides to being labeled as mentally ill, and demonstrating the need for research on the impact of mental health labeling in the specific area of task performance. Additionally, this chapter presents the organization of the manuscript.

1.1 Medicalizing Mental Illness

The traditional biomedical approach to mental illness was rooted in the idea that problems can be identified via molecular biology and diagnosed, primarily to the exclusion of social and environmental factors (Fava and Sonino 2008). Critics, including, most notably, George Engel (1977), successfully advocated for a more inclusive model

that conceptualized illness as the confluence of “interacting mechanisms at the cellular, tissue, organismic, interpersonal, and environmental levels” (Fava and Sonino 2008:1). Combining science with humanism, this biopsychosocial model took hold as the major organizing principle of American psychiatry from World War II until the mid-1970s (Wilson 1993). Psychoanalysis became the guiding theory and psychotherapy the most common treatment. The American Psychiatric Association’s 1952 *Diagnostic and Statistical Manual of Mental Disorders I* (DSM-I) and 1968 *Diagnostic and Statistical Manual II* (DSM-II) described symptoms as symbols of people’s personal histories—reactions to challenging life events. Moreover, leading psychiatrists like Karl Menninger argued that separating mental disorders along symptom profiles was a faulty approach given that mental disorders could be reduced to the extent to which individuals were able to adapt to their environments (Mayes and Horwitz 2005).

However, the traditional biomedical model proved to be resilient, returning to prominence in the American Psychiatric Association’s 1980 *Diagnostic and Statistical Manual of Mental Disorders-III* (Blacker and Tsuang 1999). By this point, criticism from within and without the medical establishment of psychoanalysis and the biopsychosocial model had led to a “crisis of legitimacy” for psychiatry (Mayes and Horwitz 2005:249). The *DSM-III* represented a restorative moment. Based on extensive field trials, the *DSM-III* was regarded as more objective and logical; as Jerrold Maxmen (1985:31) put it, “the old psychiatry derives from theory, the new psychiatry from fact”

(First 2010). As such, this version of the *DSM* received approval from American medical schools, the National Institute of Mental Health, and other institutions which had failed to embrace previous *DSMs* (Mayes and Horwitz 2005).

The *DSM-III* provided psychiatrists, psychologists, social workers, counselors, providers of financial reimbursement (such as insurance companies and the government), and the general public with common definitions for diagnosable mental disorders for the first time. With the common language of the *DSM-III*, clinical research boomed as researchers were able to more easily satisfy governmental demands for the use of standardized scientific criteria in grant proposals. Further, the *DSM-III's* focus on symptomatology and pharmacological treatment ushered in a new dawn for pharmaceutical companies which set to work providing remedies for newly diagnosed mental disorders (Mayes and Horwitz 2005). Medicalization expanded even further with the *DSM-IV*; for example, grief, once considered normal for up to a year after bereavement in the *DSM-III*, was presented as problematic after just 2 months according to the *DSM-IV*. The solution presented? Antidepressants (Walton 2012).

Medicalization continues to rise at: 1) the conceptual level, whereby medical vocabulary is extending to encompass more and more of human experience; 2) the institutional level, wherein medical personnel make treatment decisions; and 3) the interactional level, where physicians treat patients (Conrad 2007; Conrad and Schneider

1980).¹ More than this, however, medicalization is continually reified in everyday interactions between the medically labeled and the non-medically labeled and in the interactions that the medically labeled have with institutions designed to accommodate them. What does all of this rising medicalization mean for those who are subject to it? Like any tool, it has the potential to build or to deface, to create or to destroy. It is to this duality that we now turn.

1.2 The Potential Benefits of Medicalization

Medicalization offers a number of potential benefits. For example, those diagnosed with a mental disorder have recourse to a professional explanation for their non-normative experiences; as Conrad and Potter (2000:103) note, “Life’s troubles are often confusing, distressing, debilitating, and difficult to understand.” A diagnosis presents an opportunity to comprehend some of the previously inexplicable events which may have befallen the patient due to his or her symptomatology.² The patient may see the application of a medical definition to his or her particular sets of experiences and behaviors as a welcome validation of the legitimacy of his or her struggles (Broom and Woodward 1996). A diagnosis allows one to stand with the full (or at least partial,

¹ It should be noted that forces of demedicalization are also at play for certain aspects of human experience (Halfmann 2012).

² However, access to and successful application of such information is much less contingent on face-to-face interactions with medical professionals than it once was given the rise of patient knowledge and advocacy (Conrad and Leiter 2004).

in the case of contested diagnoses) weight of the medical establishment behind one's claims of difficulty or distress.

Additionally, with a diagnosis, persons with a mental disorder may also have access to the expertise of health care providers regarding treatment options for their problematic symptoms as well as the medicinal resources to combat those symptoms. One may not legally obtain certain forms of treatment without a diagnosis. In the case of ADHD, for example, many of the more effective medications, including Adderall, Ritalin, and Dexedrine, are only available via prescription due to their classification as Schedule II substances by the United States Drug Enforcement Administration (DEA) (DeSantis et al. 2008).

Aside from treatment, a diagnosis offers the opportunity to obtain educational and occupational accommodations or protection against discrimination under anti-discrimination laws such as the Americans with Disabilities Act (ADA) (U. S. Department of Justice 2009). The United States' Equal Employment Opportunity Commission (EEOC) (2008) notes that any American with "a physical or mental impairment that substantially limits one or more major life activities," "a record (or past history) of such an impairment" or "being regarded as having a disability" may qualify for accommodations under the Americans with Disabilities Act (ADA). The courts have established a number of mental health-related symptoms as capable of validating substantial limitation to major life activities including cognitive functioning in general

and, more specifically, concentrating and remembering (Brown v. Cox 2002; Gagliardo v. Connaught Laboratories, Inc. 2002). The accommodations thereby available may afford persons with mental disorders the opportunity to perform at a level reasonably commensurate with that of their non-affected peers. For those whose mental disorders render them incapable of working, a diagnosis legitimates the receipt of benefits from the Social Security Administration (SSA). In fact, among those receiving SSA benefits, people with psychiatric disabilities comprise the largest and fastest-growing group (Drake et al. 2009).

1.3 The Potentially Negative Aspects of Medicalized Labeling

No matter how useful the benefits of medicalization or how well-intentioned the efforts of health care practitioners, however, those who diagnose may be exposing their patients to stigmatization by labeling them as persons with mental disorders, attributes that are “deeply discrediting” (Link et al. 1989; Goffman 1963:3). Indeed, many of the earliest social scientific writings on medicalization were critiques of psychiatry (Conrad 2005). Earlier studies suggested that the stigmatizing label of “mental patient” can function as an “engulfing role” (Schur 1971) or “master status” (Becker 1963), remaining lodged in the minds of others as a persistently relevant part of oneself. Persons with mental health conditions report negativity from members of their families, churches, and broader communities, facing stigmatization even from the medical professionals who treat them (Wahl 1999; Penn and Martin 1998; Angermeyer and Matschinger 1997; Wolff

et al. 1996; Hamre et al. 1994; Brockington et al. 1993; Monahan 1992). Views of the mentally ill as dangerous and prone to unexpected behaviors, in particular, are common (Wahl 1995; Link and Stueve 1994; Dubin and Fink 1992; Monahan 1992).

This is not to suggest that views of widespread negativity toward those labeled as mentally ill are uncontested. A number of scholars have disputed the notion that the stigma of mental health patients is pervasive while others have suggested that, if stigmatization does result from mental disorder, then it is a reaction to deviant behavior rather than to a stigmatizing label (Gove 1975; Lehman et al. 1976; Crocetti et al. 1974). However, many such claims have been refuted by research revealing the widespread stigmatization brought on by mental illness even when mental health labels are present but aberrant behavior is not (Monahan 1992; Link et al. 1987).

Mental illness labeling has material effects, leading to inhibited access to employment (Link 1987; Link 1982), housing (Mor et al. 1984; Page 1977), and health insurance (Saban and Daniels 1994). Additionally, mental illness can also inhibit marriage and parenthood opportunities (Link et al. 1991) and disrupts interpersonal relationships (Sibicky and Dovidio 1986; Farina et al. 1971; Farina et al. 1968). When one's mental disorder becomes known, he or she tends to more frequently avoid and be avoided by others socially (Martin et al. 2007; Phelan 2005; Corrigan et al. 2003; Wright et al. 2000). Furthermore, the mentally ill report disappointment, pain, and anger as a result of such stigmatization and experience anxiety, diminished self-esteem, and

depression (Link et al. 2001; Wahl 1999; Link et al. 1997; Link 1987; Farina 1981).³ While it is clear that medicalized labeling may be responsible for many negative effects, the impact of such labeling in task performance circumstances remains substantially more ambiguous.

1.4 Medicalized Labeling in Task Performance Scenarios

Students subject to compulsory education in the United States spend approximately 180 days per year in school in most states (Education Commission of the States 2011). The average employed American spends 1787 hours working each year (Organisation for Economic Co-Operation and Development 2013). Education and employment involve the perpetual completion of tasks, the success or failure of which determines the quality and longevity of one's educational or vocational experiences. Although recent research has examined the role of medicalization in the workplace and in education, knowledge of how specific mental illness labels impact perceived and actual adult performance in educational and vocational contexts remains limited (Conrad 2007). This is true at both the group and individual levels of analysis.

³ Mental illness in these studies typically reflects diagnosis label (e.g., Link et al. 2001; Link et al. 1997; Link et al. 1991; Link 1987; Link 1982; Link 1977; Page 1977), although some focus specifically on history of hospitalization (e.g., Mor et al. 1984) or history of psychological therapy (e.g., Sibicky and Dovidio 1986). Overall, however, being labeled as a person with a mental illness is sufficient in and of itself to subject one to a variety of negative outcomes.

1.4.1 Group Level

Early social psychologists focused primarily on questions concerning group performance, as many tasks are performed in social settings. Some tasks are seen as impossible for an individual to manage or requiring a diversity of knowledge to handle (Hackman and Morris 1975). Working in groups also may also diminish mistakes as more eyes are on the task.⁴ The efficiency and effectiveness of organizations is directly attributable to the success or failure of the work groups embedded within them (Kravitz and Martin 1986; Paulus 1983; Lewin, Lippitt, and White 1939; Sherif 1936; Shaw 1932; Ringelman 1913).

Groups working toward mutual goals vary widely in efficacy based on a number of factors (Gladstein 1984; Newton and Levinson 1973). Levels of cooperation and discussion influence productivity (Komorita and Parks 1995; Sally 1995). So too does the degree of familiarity among group members (Jehn and Shah 1997).

Crucial to the internal dynamics of groups are the features of their members and the idiosyncrasies of their heterogeneous socio-demographic profiles. Managing diverse work groups is one of the most challenging aspects of maintaining a successful organization (Tsui and Gutek 1999). Conventional research on diversity within work groups revealed the impact of age, sex, race, ethnicity, and other relatively overt

⁴ However, on the other hand, many social psychologists argue that group interaction leads to “social loafing” (e.g., Karau and Williams 1993; Ingham et al. 1974; Ringelman 1913) or “process losses,” which impede overall productivity (Hackman and Morris 1975:47).

“surface-level” or “high-visibility” factors on performance (Williams and O’Reilly 1998; Pelled 1996; Jackson, May, and Whitney 1995). For example, age differences within groups are negatively associated with within-team functioning, leading to reduced cohesion, diminished communication, higher turnover, and social isolation of group members (Kirchmeyer 1995; Jackson et al. 1991; O’Reilly et al. 1989; Zenger and Lawrence 1989). More recently, scholars have turned their attention to “deep-level” factors that distinguish members from each other, such as personality traits, values, attitudes, preferences, and beliefs (Barsade et al. 2000; Harrison, Price, and Bell 1998; Jehn, Chadwick, and Thatcher 1997).

Medicalized mental health conditions often function as deep-level factors. Like personality traits or preferences, they tend to emerge from their initial latency through interaction (Harrison et al. 2002). Over time, patterns of behavior, exchanges of confidence, or even Facebook postings reveal more about medicalized mental health conditions, bringing them to the surface (Martin et al. 2012). However, our knowledge of how specific mental health labels are viewed in task groups remains limited. Given that knowledge of one’s mental illness can result in interpersonal disruptions, mental illnesses nonetheless vary dramatically in severity across diagnosis types. Thus, understanding the differential effects of mental health labeling on group dynamics remains important (Martin et al. 2007; Phelan 2005; Sibicky and Dovidio 1986; Farina et al. 1971; Farina et al. 1968).

1.4.2 Individual Level

Success is not always a product of group initiative. From driving a car to taking a standardized test, some tasks require individual effort alone. As with group level task performance, many factors influence task performance at the individual level, including the extent to which one multitasks and one's conscientiousness, need achievement, locus of control, level of anxiety, and self-esteem (Shao and Shao 2012; Gellatly 1996; Eysenck 1985). Individual task performance is also tied to one's knowledge, psychomotor abilities, and attentional resources (Sonnetag and Frese 2002).

What then is the impact of mental illness labeling on individual task performance? Beyond the symptomatology of the condition underlying a mental illness label, external perceptions of what that label entails—fueled by stereotypes and prejudices—can create a detrimental environment for those who are labeled. Public stigma, having been observed at the individual level, can, in turn, be internalized as self-stigma. Dwelling on self-stigma could potentially interfere with one's performance of everyday tasks (Drapalski et al. 2013; Corrigan and Watson 2002). However, evidence is limited as to the extent to which self-stigma resulting from mental health labeling impacts measurable task performance at the individual level.

1.4.3 The Present Studies

This dissertation moves beyond previous investigations of the detriments of medicalized labeling to explore the potentially adverse effects of carrying such a label

both at the group level (in interactions with group members in the performance of a shared task) and at the individual level (in test-taking performance) through two experimental studies. Extending previous research which demonstrated the negative attributions directed at task partners with a history of hospitalization for psychological problems, Study 1 focuses on differentiation across specific medicalized labels (Lucas and Phelan 2012). Lucas and Phelan (2012) found evidence that mental illness triggered stigmatizing feedback from participants as well as attributions of lower status, indicating that mental illness may not just be stigmatized but may also represent a status characteristic. Status characteristics are organizing principles within social systems consisting of hierarchical states (such as, for example, “gender” with its states of “male” and “female”). However, in gauging perceptions of mental illness in task groups, Lucas and Phelan considered only a small range of differentiation within mental illness (previously hospitalized for 12 months or not). Study 1 proceeds from the standpoint that stigma and status perceptions differ across more nuanced states of mental illness than hospitalization status.

Specifically, Study 1 seeks to answer the following question: 1) To what extent do specific mental illness diagnoses alter perceptions of task group partners in terms of stigma and status? In other words, when behavioral indicators and information about treatment history are unavailable, to what extent do differing mental illness labels themselves drive attributions of stigma and status in work groups? If substantial

perceptual differences exist between diagnoses, then treating mental illness more monolithically may obscure important details in how people with mental illnesses are perceived in workgroups to the detriment of productivity. For example, if participants typically view persons with Diagnosis A as being of low status yet do not stigmatize against them and typically view persons with Diagnosis B as being of equal or higher status to themselves but as highly stigmatized, then interventions to maximize workplace cooperation and efficiency would need to address these diagnoses differently. Study 1 considers potential differentiation between perceptions of Generalized Anxiety Disorder (GAD), Major Depressive Disorder (MDD), Attention-Deficit/Hyperactivity Disorder (ADHD), and schizophrenia.

Study 2 moves from group level perceptions to self-stigma and its impact on individual level performance. Others' stigmatizing views of oneself can be internalized to detrimental effect (e.g., Drapalski et al. 2013; Kroska and Harkness 2008; Hinshaw 2007). One way in which this occurs is through stereotype threat, or the fear of confirming a stereotype about a personally-relevant group identification (Steele 1997). Research confirms that stereotype threat diminishes test-taking performance among African Americans (Blascovich et al. 2001; McKay et al. 2002; Mayer and Hanges 2003), West Indians (Deaux et al. 2007), and Latinas (Gonzales et al. 2002) as well as among women (regardless of race) (Spencer et al. 1999; Quinn and Spencer 2001; O'Brien and Crandall 2003) and among individuals from low socioeconomic (SES) backgrounds

(Croizet and Claire 1998; Spencer and Castano 2007) as well as on a number of other bases. However, social scientists have yet to evaluate the impact of stereotype threat on adults labeled with a task-relevant mental disorder. Study 2 explores whether stereotype threat invoked on the basis of having ADHD impedes test-taking performance.

Previous research found evidence that stereotype threat may emerge on the basis of depression but not eating disorders (Quinn et al. 2004). Thus, it appears that some mental disorders may trigger stereotype threat while others may not. This study focuses on the following research question: can a task-relevant mental disorder form the basis for stereotype threat? More specifically, when the symptomatology of a mental illness is directly related to a task such that it would be expected to inhibit performance, can the label associated with that illness reduce task success separately of the illness' symptomatology via stereotype threat? ADHD's symptomatology includes a number of facets relevant to test-taking, such as being distracted by extraneous stimuli or failing to follow directions (Educational Testing Service 2008).

1.5 Organization of the Manuscript

Studies 1 and 2 provide insight into two different types of perception (external and internal) situated at two important points in the road to productive adulthood (test-taking, a precursor to educational attainment, and task group participation, a key component of occupational success). Chapter 2 details the first study, exploring

participants' status-based and stigma-based reactions to a task partner with different mental illness labels in the performance of a shared task. Chapter 3 focuses on the second study, featuring the first known test of whether a domain-relevant mental illness label can invoke stereotype threat. Chapter 4 concludes the dissertation, summarizing its key findings, noting limitations, and providing suggestions for future research. Altogether, the project provides perceptual measures and performance-based measures designed to uncover the potential limitations and detriments posed by efforts to improve the lives of the mentally disabled through diagnosis and labeling.

2. Clinically-Categorized Cross-Cubicle Conflict?: How Mental Disorder Labels Alter Perceptions of Task Partners (Study 1)

“These people go to work, but they’re the working wounded.” –Joseph Calabrese, Professor of Psychiatry (Armour 2006).

Employed Americans spend approximately 7.6 hours working on each day that they work (Bureau of Labor Statistics 2011). In 2011, as the average hours worked for developed nations fell on average, they rose in the United States to 34.5 hours per week (Organization for Economic Co-operation and Development 2012). Moreover, work is an important component of identity and a major determinant of mental health (Stuart 2006; Hulin 2002). Given the centrality of work in Americans’ lives, maintaining a hospitable work environment is important, particularly since workplace incivility may represent a veiled manifestation of discrimination on the basis of specific sociodemographic categories.

Though desired and attempted, workplace civility, (which includes working hard on team projects, accepting responsibility for blame, and avoiding disrespect and condescension among other factors), is hardly guaranteed (Forni et al. 2003; Cortina et al. 2001). Forty-three percent of Americans report that they have experienced incivility at work, with 20% quitting a job as a result (Weber Shandwick, Powell Tate, and KRC Research 2012; Weber Shandwick, Powell Tate, and KRC Research 2011). Studies

focused on a variety of vocational arenas capture the tenuousness of maintaining concord in the workplace; for example, two-thirds of respondents to a study of members of a southeastern state bar association reported incivility as a growing problem in their profession (Wegner 1996). Similarly, new graduate nurses note the routine discourteousness of senior nurses (Laschinger, Finegan, and Wilk 2009). In other samples, 71% of court employees (Cortina et al. 2001), 75% of university employees (Cortina 2008), and 79% of law enforcement (Cortina 2008) reported incivility in their professions in recent years.

The consequences of workplace incivility resonate beyond the immediate discomfort it generates. Incivility breeds retaliatory incivility which can escalate to coercion and violence (Kain 2008; Andersson and Pearson 1999). Ongoing workplace incivility can also be detrimental to both individual and organizational performance (Estes and Wang 2008; Cortina 2008; Cortina et al. 2001). In uncivil work environments, workers tend to have lower creativity, stop asking for help, hide their errors, avoid letting each other know about potential problems, lose concentration, and are less willing to expend discretionary effort (Pearson and Porath 2009; Cortina 2008; Sutton 2007). Targets of workplace incivility tend to arrive at work later and leave earlier or take additional time off to avoid difficult situations (Pearson et al. 2005). Moreover, the discomfort generated by workplace incivility can trigger stress-related mental and physical health problems that reduce productivity (e.g., depression, anxiety, ulcers, and

migraines) (Baba, Jamal, and Tourigny 1998; Adams 1988). Ultimately, incivility in the workplace can lead workers to lose commitment to their organizations and quit (Cortina 2008).

Recent scholarship posits that incivility in organizations may simply be thinly-veiled categorical discrimination—a product of prejudicial perceptions of one’s co-workers. Cortina (2008) describes how blatant attempts to discriminate against women and minorities in the workplace has become increasingly less socially acceptable, yet day-to-day acts of incivility allow such discrimination to continue more subtly. Everyday incivility can often be explained away as the result of misunderstanding, accident, oversight, or personality, and intent can be difficult to prove.

As with race and gender, mental health diagnoses may constitute another basis for workplace incivility overlaying deeper issues of prejudice and attempting to explain away serious forms of discrimination. Although people recognize that societal norms direct them to be accepting of people with mental disorders, they also report belief that most other people view the mentally ill negatively. This may represent a method of deflecting personal negative attributions onto society writ large while outwardly conforming to expectations of what is socially acceptable (Hinshaw 2007; Link and Cullen 1983). However it is also true that mental illness is highly rejected in most societal contexts, being viewed more similarly to prostitution, drug addiction, and ex-convict status than to having a physical illness like cancer or heart disease (Albrecht,

Walker, and Levy 1982; Tringo 1970). What remains unclear is how specific mental illness labels are perceived within task groups. Given the importance of well-functioning task groups to the success of organizations and the difficulty of managing heterogeneous work groups, this area of diversity demands attention (Tsui and Gutek 1999) To what extent, then, do stigma and status attributions differ across mental illness types in settings in which incivility may hamper the performance goals of an organization?

Stigma and status—two interrelated but distinctly developed means of determining how social categories pattern unequal interpersonal outcomes—each provide useful approaches for understanding prejudicial perceptions (Lucas and Phelan 2012). This study explores how representing a partner as having a mental health label impacts participants' stigma-based and status-based perceptions of a partner in intergroup task scenarios. A previously overlooked line of inquiry, understanding perceptions of stigma and status in the context of task groups working toward a common cause may help clarify the extent to which medicalization has complicated perceptions of the mentally ill in the workplace. To clarify the theoretical contribution that this study offers to sociological knowledge, I turn to a discussion of stigma and status and their relevance to workplace perceptions of those diagnosed as mentally ill.

2.1 Theoretical Background

2.1.1 Stigma and Mental Illness

In 1999, then-U.S. Surgeon General David Satcher identified stigma as “the most formidable obstacle to future progress in the arena of mental illness and mental health” (Hinshaw 2007:x). Despite the fact that knowledge of mental illness has increased in the U.S., severe forms of mental disorder face higher stigma now than ever (Hinshaw 2007). Although there is variability in conceptualizations of stigma, one of the more widely accepted ones was proposed by Erving Goffman (1963). He describes stigma as an “attribute that is deeply discrediting,” reducing the stigmatized individual from “a whole and usual person to a tainted, discounted one” (Goffman 1963:3). Goffman (1963) identifies three characteristic types susceptible to stigmatization: 1) physical deformities (e.g., having a cleft palate, being overweight, having a handicap); 2) “tribal” characteristics that differ from those in power (e.g., race, nationality, religion); and 3) blemishes of character (e.g., radical political behavior, suicidal tendencies, or homosexuality). Extensions from Goffman characterize stigma alternatively as being characteristic of those who violate social norms (Crocker et al. 1998) or convey attributes of a social identity devalued in a particular social context (Stafford and Scott 1986).

Link and Phelan (2001) provide a useful synopsis of the stigma process, describing its production via four components. They argue that people: 1) distinguish and label differences; 2) associate these differences with negative attributes; and 3)

categorize labeled persons in such a way as to create a “them” category separated from “us,” (the unlabeled). Through this process, the labeled then become 4) exposed to status loss and discrimination.

Mental illness has long been viewed as consistent with these criteria and, in fact, has served as a catalyst for modification of scholarly understandings of stigma.

Goffman (1963) provided mental illness as an example of a blemish of character (one of his three bases for stigma). Scheff (1966) proposed that deviance is labeled as mental illness by society, leading the deviant to then enact behaviors consistent with the label in a self-fulfilling prophecy. Objections to the evidentiary basis for Scheff’s (1966) claim led Link (1982, 1987) to develop modified labeling theory, which removed the suggestion that labeling caused mental illness. Modified labeling theory explained how, when people become diagnosed with mental illnesses, cultural stereotypes about mental illness (such as, for example, dangerous or incompetence) become personally relevant to them and result in expectations that others will react negatively to them (Link 1987; Link 1982). As a result, those labeled with mental illness conceal their diagnoses and withdraw from social situations in order to avoid rejection. In so doing, however, they isolate themselves in a manner that makes them more vulnerable to rejection.

However, the level of potential rejection faced by persons with mental illness may not apply uniformly across diagnosis types. In their elaboration on stigma, Jones and colleagues (1984) identify 6 factors which could influence differential perceptions

across mental illness labels, including: 1) concealability (how visible or hidden the stigmatized characteristic is); 2) course (how the characteristic changes over time); 3) disruptiveness (the extent to which the characteristic disrupts social relations); 4) aesthetics (the extent to which the characteristic impacts bodily presentation); 5) origin (how the characteristic became devalued and how controllable it is); and 5) peril (how dangerous the characteristic is). Applying these criteria to mental illness labels, differences frequently emerge. For example, regarding origin, Link et al. (1999) found, in a vignette experiment, most respondents blamed alcohol dependence on the way people were raised, whereas most respondents saw a chemical imbalance in the brain as the cause for schizophrenia and major depression. The same study provides an example of differences in perceived peril across illness categories; respondents saw people with schizophrenia as more dangerous than persons with major depression.

The Stereotype Content Model (SCM) sheds further light on how stigma may differentially apply across mental health conditions (Fiske et al. 2000). This model is based on the premise that some groups solicit antipathy while others invoke ambivalence based on perceptions of their competence and warmth. Research on SCM has revealed that people with schizophrenia, for example, may be seen as less competent and less warm than people with depression or an anxiety disorder (Sadler, Meagor, and Kaye 2012).

2.1.2 Status Characteristics Theory and Mental Illness

In addition to stigma, differential perceptions of status may drive negative conceptualizations of partners in task groups. To a greater extent than in the stigma literature, the status literature tends to be singularly guided—in this case, by status characteristics theory (Lucas and Phelan 2012). Societal power and prestige hierarchically align with a continuum of states for any given status characteristic. A status characteristic, such as age, sex, or race, represents “an organizing principle of social systems” about which differentiation occurs, while states constitute the levels of hierarchy within a status characteristic (Webster, Jr. and Hysom 1998:351). For example, within the status characteristic of “gender” are the states of “male” and “female.” “Male” represents a state typically accorded greater power and prestige within American society than the state of “female” (Eagly et al. 1992; Carli 1991). This sort of differentiation is thought to account for distinctions in one’s expectations of others’ task performance abilities (Wagner and Berger 1993).

Status characteristics theory “seeks to explain how beliefs about status characteristics get translated into performance expectations, which in turn shape the behaviors of individuals in a group” (Correll and Ridgeway 2003:33). According to the theory, when actors come together to complete a common task, they take note of discernible status differentiation. In doing so, they make assumptions about themselves and their fellow task partners based on their expectations concerning how well each

person should perform who inhabits each state on a given status characteristic or set of status characteristics (Wagner and Berger 1993:28). High status individuals are typically expected to perform more effectively than low status individuals, and these expectations reinforce how highly members of a given state of a status characteristic are valued within a task group (Lucas and Phelan 2012). Status differentiation may emanate from inhabiting different states on a number of status characteristics including—but not limited to—race, gender, education, task ability, physical attractiveness, age, and even dialect (Lucas and Phelan 2012; Hopcroft 2002; Webster, Jr. and Hysom 1998; Wagner and Berger 1993; Eagly et al. 1992; Carli 1991).

Given that stigmatization leads to status loss (Lucas and Phelan 2001), perceptions of status may be interconnected with stigma. Although researchers have used status characteristics theory to explain differences in perceptions of task partners' performances given those partners' states on a number of status characteristics, medical diagnosis status remains unexplored in previously published research. As Lucas and Phelan (2012) argue, "...no research in the status characteristics program has tested for status effects of mental illness" (19).

Lucas and Phelan (2012) attempted to address this gap in the literature with experiments addressing the stigma and status-based perceptions surrounding education, mental illness, physical disability, and task ability. To measure perceptions of mental illness, participants first completed 25 computer-based problems in which

they determined which of two rectangles that were roughly equally shaded or unshaded was the most shaded. They did so in partnership with an individual (simulated by the computer) who either had no recorded history of mental illness or who had been hospitalized for 12 months for “psychological problems.” For each problem, the participant chose an answer, saw their fictitious partner’s answer, and then gave a final answer, with the partner disagreeing for 20 out of the 25 problems. Participants then had the option to sign up for the second half of the study in which they chose a topic to discuss in a two-person group. Availability was limited such that participants could only sign up to work with their previous partner or with another anonymous partner. Lucas and Phelan (2012) measured stigma based on social distance (defined by the proportion of participants in each condition who agreed to work with the same partner again) and status based on the partner’s influence (defined by the number of times that, seeing the partner’s answer, the participant chose to change his or her answer).

Lucas and Phelan (2012) found mental illness to be associated with lower influence and greater social distance. Their findings indicate that having a history of mental disorder results in stigma-based and status-based negative perceptions of one’s intergroup task performance. However, having a mental disorder, in the context of Lucas and Phelan’s (2012:12) study was represented only by a variable with noteworthy limitations: having been hospitalized for 12 months for unspecified “psychological problems.” The length of hospitalization suggests very serious mental distress, while

the general label of “psychological problems” provides insufficient information to determine what kind of psychological problems afflicted the partner (Lucas and Phelan 2012). Given what we know about the extent to which states within a status characteristic are hierarchical, it stands to reason that specific mental disorder diagnoses would differ in terms of the status and stigma expectations accorded to them by participants in task groups (Wagner and Berger 1993). However, evidence from surveys and vignette studies indicates significant differences in how mental health diagnoses differ from one another: for example, in a survey of undergraduates, Mann and Himelein 2004 found schizophrenia to be generally more stigmatizing than depression. However, Link and colleagues (1999) found, in a vignette study, that more respondents to the 1996 General Social Survey attributed major depressive disorder to one’s own bad character than schizophrenia.

The present study is procedurally similar to Lucas and Phelan’s (2010) work on mental illness-based stigma and status attributions except insofar as its conditions focus on specific mental health diagnoses without mention of the task partner’s treatment history. In other words, this study does not indicate that the partner was hospitalized for the mental disorder in any condition. The focus remains on the medicalized label rather than on the severity of condition implied by hospitalization.

The present study incorporates four mental disorder designations: Generalized Anxiety Disorder (GAD), Major Depressive Disorder (MDD), Attention

Deficit/Hyperactivity Disorder (ADHD), and schizophrenia. GAD is included as representative of anxiety disorders and is characterized by excessive worry even when there is no apparent reason for it, difficulty sleeping, muscle tension, irritability, and a number of other related symptoms (National Institute of Mental Health 2009). Anxiety disorders comprise the most prevalent class of Diagnostic and Statistical Manual-IV (DSM-IV) disorders; 28.8% of those diagnosed with a DSM-IV disorder at some point during their lifetimes will be diagnosed with an anxiety disorder (Kessler et al. 2005). Its degree of impairment and disability is considerable even without a co-morbid diagnosis and comparable to that of MDD (Wittchen 2002). Research indicates an association between GAD and substantial economic costs resulting from lost work productivity and high use of medical resources (Hoffman, Dukes, and Wittchen 2008).

Major depressive disorder, which indicates prolonged sadness with the potential to stifle one's ability to perform everyday tasks, finds a place in the study as the most prevalent lifetime disorder in the DSM-IV. It is also the leading cause of disability among Americans between the ages of 15 and 44 (National Institute of Mental Health 2010; Kessler et al. 2005). For these reasons, it is also included in the study.

Characterized by inattention, compulsiveness, hyperactivity, and recklessness, ADHD is included in the study, as it is the most common mental disorder found in children and adolescents and may continue into adulthood (National Institute of Mental Health 2010; Kessler et al. 2006). Finally, schizophrenia is included, as schizophrenia

disorders are the most common forms of mental illness after anxiety disorders and mood disorders (such as depression) (Zuckerman et al. 1993). Additionally, schizophrenia is one of the leading worldwide causes of disability (Brundtland 2000). All of the included mental disorders have been documented as stigmatizing to at least some degree (Alonso et al. 2008; Barney et al. 2006; Angermeyer and Matschinger 2004; Davies 2000; Dickerson et al. 2002; Sims 1993).

2.2 Hypotheses

As has already been established, having a mental disorder can invite a great deal of stigma (Wahl 1999; Penn and Martin 1998; Angermeyer and Matschinger 1997; Wolff et al. 1996; Wahl 1995; Hamre et al. 1994; Brockington et al. 1993; Dubin and Fink 1992; Monahan 1992; Link et al. 1989; Schur 1971; Becker 1963). Given this stigma and Lucas and Phelan's (2012) findings of stigma effects for mental illness broadly construed as hospitalization within the last twelve months for psychological problems, I hypothesize that:

Hypothesis 1: Participants will have more stigmatizing views of partners identified as having a mental disorder than those who are not.

While having a mental disorder is not seen as automatically indicating an inability to make decisions effectively, it does call into question decision-making capacity (Grisso and Appelbaum 1991). In more serious cases, skepticism about the impact of having a mental disorder on one's faculties of reason even leads to medical

professionals restricting or taking away a patient's opportunities to make decisions via hospitalization (Brakel 1985). Ultimately, it is difficult to know from cursory interaction with a person with a mental health diagnosis whether that person will be capable of making decisions at the level required of the average person without a medical disorder. In fact, as Grisso and Appelbaum (1991) and Grisso (1986) attest, two people with the same diagnosis can vary widely in terms of functional ability. Being cognizant of the skepticism directed toward the decision-making capacity of persons with a mental disorder and considering Lucas and Phelan's (2012) findings of status effects for mental illness broadly construed as hospitalization within the last twelve months for psychological problems, I hypothesize that:

Hypothesis 2: Participants will attribute lower status to task partners identified as having a mental disorder than task partners who are not.

Focusing on stigma, Hypothesis 1 regards expected differences in social distance (based on willingness to participate with the same partner in the future), judgments about how much the participant has in common with the partner, and attributions of the partner's considerateness, pleasantness, power, likeability, and cooperativeness.

Hypothesis 2 focuses on status and regards a partner's influence on the participant to change his or her answers on the collaborative contrast sensitivity task and attributions of the partner's competence, skill, respectability, knowledge, leadership, capability, and hard work as well as the group's success.

Although Generalized Anxiety Disorder, ADHD, major depressive disorder, and schizophrenia all invite potential stigma (Alonso et al. 2008; Barney et al. 2006; Angermeyer and Matschinger 2004; Davies 2000; Dickerson et al. 2002; Sims 1993), as a “severe mental illness,” schizophrenia is particularly off-putting (Penn and Martin 1998:235). In one vignette study, respondents demonstrated more stigmatizing views of schizophrenics than persons suffering from major depressive disorder (Mann and Himelein 2004). Specifically, schizophrenics are often assumed to be unpredictable or dangerous; Crisp and colleagues (2000) found that two-thirds of their respondents saw people with schizophrenia as dangerous even though dangerous behavior among schizophrenics is infrequent. This opprobrium of schizophrenics can lead to tragic outcomes. Druss and colleagues (2000) found that schizophrenics received less optimal treatment for heart attacks than persons without schizophrenia regardless of the availability of optimal treatment procedures or the physical state of the patients involved. If even obtaining ideal medical care is complicated by schizophrenia, then it is likely that intergroup cooperation will be also be disrupted by its presence. Therefore, I hypothesize that:

Hypothesis 3a: Participants will attribute the highest stigma to task partners identified as having schizophrenia.

Hypothesis 3b: Participants will attribute the lowest status to task partners identified as having schizophrenia.

Generalized anxiety disorder—not only as a result of often being accompanied by co-morbid conditions but also in its own right—can be just as debilitating as major depressive disorder and negatively impact social involvement (Wittchen et al. 2000; Kessler et al. 1999; La Greca and Lopez 1998; Reno and Kenny 1992). Nevertheless, its legitimacy as a diagnosis, like ADHD's, has been viewed with much skepticism (Stolzer 2007; Barkley 2002; Ballenger et al. 2001).¹ Thus, participants may not consider it a strong factor in task partner performance. Even if accepted as a factor in task performance, a diagnosis of generalized anxiety disorder could possibly be interpreted as useful to the task group. Anxiousness, though detrimental to our health, may bolster our alertness and decision-making in the short term; in a longitudinal study of students born in 1946, Lee and colleagues (2006) found that those who were considered by their teachers when they were 13 to be high in anxiety were significantly less likely to die via accidental circumstances (Lee et al. 2006). If anxiety confers some degree of protection against lethal accidents, then, perhaps, it may also grant those diagnosed with generalized anxiety disorder a heightened attention to detail in an intergroup task setting. Thus, I hypothesize that:

¹ However, ADHD has been shown to be particularly stigmatizing. In a vignette study, Martin and colleagues' (2007) found that participants directed the most stigmatization in their study toward persons with ADHD. Stigmatization of persons with ADHD exceeded even that directed toward persons with major depression.

Hypothesis 4: Except for the condition in which partners are not represented as having been diagnosed with a mental disorder, participants will attribute the least stigma and most status to partners identified as having been diagnosed with generalized anxiety disorder.

2.3 Methodology

2.3.1 Participant Recruitment

Participants were recruited through the Duke Interdisciplinary Initiative in Social Psychology (DIISP) participant pool at Duke University, and all procedures were approved by the Institutional Review Board for Non-Medical Research of the Campus Human Subjects Protections Program at Duke University. The participant pool consists of both students and other community members from Durham, NC and the surrounding area. Participants read a prompt indicating that the study was an exploration of differences in intergroup interactions when communication is limited to the medium of a computer network and in cases where in-person communication is possible. They then signed up for the first half of the study—the computer network component—with the instruction that they would sign up for the second half of the study—the in-person component—when they came in to participate in the first half.

2.3.2 Procedures

The experiment took place at the DIISP lab in the Social Science Research Institute at Duke University. Each participant completed the procedures in isolation to avoid undue influence of external stimuli. Arriving for the first half of the study, the participant was informed that he or she would be working across a computer network with a partner seated in a room on the other side of the lab. (In fact, there was no partner, and the partner was simulated by a computer program.) The participant was then brought to a room and asked to complete a research participant disclosure form on Duke University letterhead with a red participant identification number that was necessary for participation. Participants were asked to write down the identification number for later use to sign up for the second half of the study. The form prompted the participant to provide his or her gender, highest level of education (high school or less, some college/an associate's degree/vocational training, a bachelor's degree, or a graduate or professional degree), and self-rated health (excellent, very good, good, fair, or poor). Additionally, the form asked whether the participant had ever been diagnosed with a chronic physical health problem or a mental disorder or learning disability and, if so, what.

Computer instructions advised participants that they would be taking part in two tasks: one alone (to practice) and one with their partner across the computer

network. Then, during the next week, they would be returning to the lab to discuss a social issue face-to-face with a partner. Upon reading these instructions, participants began the first task, a contrast sensitivity exercise commonly used in status characteristics research. Participants looked at 25 rectangles which were approximately half shaded and half un-shaded and were asked whether each had a greater shaded or un-shaded area.

Having completed the individual task, participants were told that people working across a computer network usually know a bit about each other, so the experimenter would exchange the participant and partner's research participant disclosure forms. The experimenter collected the completed research participant disclosure form and walked to the other hallway to supposedly deliver it to the fictitious partner. Information from the participant's research participant disclosure form (which had its own red participant identification number) was then used to create the fictitious partner's form. The experimenter completed the partner's form such that the partner's gender, level of education, and self-rated health were the same as the participant's. If the participant's form indicated that he or she had been diagnosed with a chronic physical health problem, then so too did the partner's. The space on the partner's form to specify which chronic physical health problem was always left blank, as congruence with the participant's answer here was deemed as so specific that it might arouse

suspicion. The questions about diagnosis with a mental disorder or learning disability provided the study's manipulation of the partner's supposed mental illness label. Regardless of whether the participant indicated having a mental disorder, the partner's response depended on the condition to which the participant was randomly assigned. The partner's form indicated either that the partner did not have a mental disorder or learning disability or that he or she had been diagnosed with one of 4 conditions (Generalized Anxiety Disorder, Major Depressive Disorder, Attention-Deficit/Hyperactivity Disorder, or schizophrenia).

Participants then began the second task, a 25-question contrast sensitivity exercise in which they supposedly worked with their partners. To motivate them, participants were told that their compensation depended on how successfully their group performed (although, following the study, all participants were actually compensated equally). For each question, two approximately half-shaded and half-unshaded rectangles would appear on the screen for a brief period of time and then disappear. Participants then chose which rectangle they thought was the most shaded, and the program paused to allow the partner to supposedly view the rectangles before displaying the partner's answer. Viewing the partner's answer, the participant had the opportunity to choose whether to stick with his or her original answer or to choose the

partner's answer. For 20 of the 25 questions, the partner's answer was programmed to differ from the participant's initial answer.

Upon completion of the task, the participant was alerted by the computer program that the session had ended and that it was time to choose a topic for the second half of the study in which participants would be talking with a partner about a social issue. The experimenter opened an Excel spreadsheet with three topics for discussion and indicated that only two people could sign up any given topic using the participant identification number provided on the research participant disclosure form. Duke students in several undergraduate classes completed a survey asking how interested they would be in talking about each of 20 topics (from very interested to not at all interested). The two topics engendering the closest mean levels of interest to each other were chosen as the ones available to the participant. One topic was already had two identification numbers beneath it. Under the other two remaining topics were one identification number and one free space. The identification number under one of the remaining topics had originally appeared on the partner's form. Participants concluded the study by answering a series of demographic and funnel debriefing questions via computer. There was no actual second half to the study, and participants were informed that they had completed the study at this point.

2.3.3 Independent Variables

The experiment incorporated 5 conditions which varied according to mental illness label of the partner as specified on the partner's research participant disclosure form. In Condition 1 (the control group), the partner's form indicated no diagnosis with a mental disorder or learning disability, while Conditions 2, 3, 4, and 5 indicated diagnosis with Generalized Anxiety Disorder, Major Depressive Disorder, Attention-Deficit/Hyperactivity Disorder, or schizophrenia respectively. In contrast to Lucas and Phelan (2012)'s approach to representing mental illness—with its expectation that participants would “take more from the fact that the partner was hospitalized for mental illness than from the partner's perhaps benign-seeming characterization of the hospitalization as related to ‘psychological problems’—this approach focuses on the specific valences of particular mental illness labels.

2.3.4 Dependent Variables

Dependent variables for the study include status measures and stigma measures. During the second contrast sensitivity task, in which the participants worked with fictitious partners, the partner always disagreed on 20 of the 25 problems. The first status variable is an influence measure reflecting the number of times that participants changed their answers when the partner disagreed. Following the study, participants completed a series of questionnaires via computer which included other status

measures. They were asked to slide a bar (with choices from 0 to 100) to indicate how competent they found their partner, how successfully the group operated, how successful they thought the group would be if they met face to face, whether the group performed well, and how the group would compare with other groups. Other status questions using this format asked how skilled, respected, knowledgeable, and high status the partner was and the extent to which the partner was a leader, was capable, and worked hard on the task.

Knowing the partner's identification number from the exchange of research participant disclosure forms, participants were able to choose whether to sign up with the same partner again or not for the (fictitious) second half of the study. Among stigma measures, one was a social distance measure based on the percentage of participants who selected the same partner for the second half of the study. Other stigma measures (paralleling the format used for status measures by which participants could slide a bar to provide an answer between 0 and 100), ascertained the extent to which the participants wanted the same partner in the next phase, saw themselves as having a lot in common with the partner, and found the partner considerate, pleasant, powerful, likeable, and cooperative. The influence measure and social distance measure parallel Lucas and Phelan (2012), while the other status and stigma measures come from

personal correspondence with the first author, Jeffrey Lucas, regarding an earlier, pre-publication version of that manuscript.

2.3.5 Sample

The full sample consisted of 167 participants. Analyses were performed on a smaller sample of 69 participants which excluded those who knew they were not working with a real partner and those who failed a check question designed to gauge their attention to the study. Specifically, the post-study funnel debriefing included the question “Did you know that you were not actually working with a real partner in this study?” For the final analyses, 55 individuals who answered in the affirmative were excluded. Additionally, when participants were completing the stigma and status questions, one question was included that instructed them to slide the bar to a specific number. Forty four participants were excluded from the final analyses for failing to slide the bar to the specified number (a lack of action which called into question their attention to other parts of the study). In addition to the 44 individuals who failed to provide the correct answer to the check question, another 11 individuals would have been excluded for this reason had they not already been excluded on the basis of having believed that they were not working with a real partner.

From the full sample, 72 participants (43.37%) were men and 94 (56.63%) were women, and whose average age was 28.75. Seventy-four (44.58%) participants identified

themselves as white, while 49 (29.52%) identified themselves as black or African American, 30 (18.07%) as Asian, and 9 (5.42%) as multiracial. Ten participants identified themselves as Hispanic (6.02%). Three (1.81%) reported having less than a high diploma, while 22 (13.25%) reported being high school graduates, 64 (38.55%) having some college or vocational school experience, 27 (16.27%) having a Bachelor's degree, 19 (11.45%) having some graduate school experience, and 31 (18.67%) having a graduate or professional degree. Random distribution yielded 31 participants (18.56%) whose partner ostensibly had not been diagnosed with a mental health disorder or learning disability, 39 (23.35%) whose partner was presented as having Generalized Anxiety Disorder, 30 (17.96%) whose partner was presented as having Major Depressive Disorder, 34 (20.36%) whose partner was presented as having Attention Deficit/Hyperactivity Disorder, and 32 (19.16%) whose partner was presented as having schizophrenia. One participant chose not to provide his or her gender, while 5 participants did not provide information on race, and 1 participant did not provide his or her education level.

Table 1. Study 1 Sample Descriptive Statistics (n = 69)

	<u>Mean/Proportion</u>	<u>Standard Deviation</u>
Age	27.43	11.60
Gender	.6377	.4842
Race		
White	.4493	.5011
Black/African American	.2753	.4500
Asian	.2174	.4155
Multiracial	.0290	.1690
Hispanic	.0870	.2838
Education		
Less than High School Diploma	.0145	.1204
High School Diploma/GED	.1449	.3546
Some College/Vocational School	.3478	.4798
Bachelor's Degree	.1594	.3687
Some Graduate School	.1304	.3392
Graduate or Professional Degree	.2029	.4051
Experimental Condition		
Control	.1739	.3818
GAD	.2029	.4051
MDD	.2029	.4051
ADHD	.2174	.4155
Schizophrenia	.2029	.4051

Note: Percentages do not sum to one hundred due to rounding

Table 1 provides descriptive statistics for the sample used in the study's analyses. Compared with the full sample, this smaller sample was more female (63.77% vs. 56.63%) and slightly younger (27 vs. 29) on average. The sample included nearly the same percentage of those who identified as white (44.93% vs. 44.58%), and a slightly

lower percentage of individuals who identified as black or African American (27.54% vs. 29.52%), Asian (21.74% vs. 18.07%), or multiracial (2.9% vs. 5.42%). Additionally, slightly more participants in the smaller sample identified as Hispanic (8.70% vs. 6.02%), and the educational breakdown was largely similar (with 1.45% reporting less than a high school diploma vs. 1.81% in the full sample, 14.49% having completed high school vs. 13.25%, 34.78% having some college or vocational school experience vs. 38.55%, 15.94% with a Bachelor's degree vs. 16.27%, 13.04% having some graduate school vs. 11.45%, and 20.29% having a graduate or professional degree vs. 18.67%).

Demographically, the smaller sample excluding participants for the purpose of improving data quality is very similar to the full sample. Moreover, participants in the smaller sample were fairly evenly distributed into experimental conditions, with 12 in the control group (17.39% vs. 18.56% in the full sample), 14 in the Generalized Anxiety Disorder group (20.29% vs. 23.35%), 14 in the Major Depressive Disorder group (20.29% vs. 17.96%), 15 in the Attention-Deficit/Hyperactivity Disorder group (21.74% vs. 20.36%), and 14 in the schizophrenia group (20.29% vs. 19.16%).

2.4 Results

Hypothesis 1 posits that participants will have more stigmatizing views of partners identified as having a mental disorder than those who are not. Table 2 provides one-tailed t-test results for stigma outcomes designed to measure the extent of

participants' perceptions of social distance from their partners. Participants whose partners were presented as having ADHD found their partners less pleasant on average (53.87 out of 100, $p < .05$) than participants whose partners were presented as having no mental disorder. However, overall, Hypothesis 1 is unsupported. Participants in the control group selected the same partner in 41.67% of opportunities. Participants whose partners were presented as having a mental disorder did not select the same partner less frequently for the second task than participants in the control group (except with marginal significance in the case of participants whose partners were presented as having GAD who chose the same partner in 35.71% of opportunities, $p < .10$). Moreover, participants whose partners were presented as having a mental disorder did not (at the .05 level of significance) express less interest in having the same partners in the next phase, see themselves as having less in common with the partners, or consider their partners less considerate, less pleasant (except in the ADHD condition), less powerful, less likeable, or less cooperative than participants in the control group.

Table 2. Mean Scores (and Standard Deviations) and Significance Test Results on Stigma Outcomes (n = 69)

<u>Variable</u>	<u>Control</u>	<u>GAD</u>	<u>MDD</u>	<u>ADHD</u>	<u>Schizophrenia</u>
Percent of participants selecting same partner	41.67%	35.71% ^t	50.00%	46.67%	57.14%
100 = Want same partner in next phase	52.83 (27.34)	65.36 (20.08)	57.50 (23.83)	49.80 (19.50)	57.36 (19.89)
100 = Has a lot in common with partner	50.50 (27.63)	50.36 (19.39)	58.36 (24.34)	56.87 (20.54)	50.00 (17.98)
100 = Partner was considerate	55.75 (23.57)	65.14 (16.12)	64.00 (18.41)	58.80 (15.12)	66.00 (22.38)
100 = Partner was pleasant	62.33 (20.16)	64.71 (18.20)	63.07 (21.80)	53.87 (14.76)*	67.00 (17.46)
100 = Partner is powerful	49.25 (23.82)	57.71 (21.16)	54.29 (18.24)	50.47 (15.37)	57.50 (26.31)
100 = Partner is likeable	60.5 (23.26)	61.57 (19.43)	61.64 (19.27)	58.87 (13.52)	63.57 (17.89)
100 = Partner was cooperative	57.42 (23.34)	63.93 (23.16)	65.36 (18.43)	57.4 (18.89)	68.93 (16.06)

= Significantly different from Control in the predicted direction with a one sample binomial test producing a one-sided $p < .001$

= Significantly different from Control in the predicted direction with a one sample binomial test producing a one-sided $p < .01$

= Significantly different from Control in the predicted direction with a one sample binomial test producing a one-sided $p < .05$

& = Significantly different from Control in the predicted direction with a one sample binomial test producing a one-sided $p < .10$

*** = Significantly different from Control in the predicted direction with a t-test producing a one-tailed $p < .001$

** = Significantly different from Control in the predicted direction with a t-test producing a one-tailed $p < .01$

* = Significantly different from Control in the predicted direction with a t-test producing a one-tailed $p < .05$

t = Significantly different from Control in the predicted direction with a t-test producing a one-tailed $p < .10$

Hypothesis 2 suggests that participants will attribute lower status to task partners identified as having a mental disorder than task partners who are not. Table 3 provides one-tailed t-tests for status outcomes designed to measure participants' perceptions of partner influence. The analyses reveal mixed results. On the one hand, participants whose partners allegedly had GAD or schizophrenia were not influenced significantly less often than participants in the control condition to change their answers in response to partners' answers on the cooperative contrast sensitivity exercise. On the other hand, participants in the MDD and ADHD conditions changed their answers less frequently than participants in the control condition. Participants in the control condition changed their answers, on average, 10.42 times out of 25 opportunities. However, participants in the MDD condition changed their answers, on average, 8.64 times ($p < .05$), while participants in the ADHD condition changed their answers, on average, 8.40 times ($p < .05$).

Table 3. Mean Scores (and Standard Deviations) and Significance Test Results on Status Outcomes (n = 69)

<u>Variable</u>	<u>Control</u>	<u>GAD</u>	<u>MDD</u>	<u>ADHD</u>	<u>Schizophrenia</u>
Times influenced in 25 opportunities	10.42 (4.23)	9.86 (2.18)	8.64 (3.10)*	8.40 (4.37)*	9.71 (3.47)
100 = Partner competent	62.33 (27.93)	69 (21.81)	74.71 (17.60)	62.33 (19.83)	75.5 (16.06)
100 = Group was successful	58.67 (23.52)	60.71 (22.25)	57.21 (17.74)	58.27 (15.93)	61.43 (16.98)
100 = Group would be successful if they met face to face	70.33 (24.47)	80.64 (11.59)	73.57 (24.34)	67.47 (22.60)	71.21 (15.04)
100 = Group performed well	62.33 (18.41)	55.57 (20.68)	50.93 (19.56)*	53.33 (14.43)*	57.5 (16.36)
100 = Group would compare well with other groups	58.17 (23.02)	60.64 (22.38)	52.93 (17.30)	58.20 (15.08)	53.57 (13.43)
100 = Partner was skilled	62.17 (24.61)	71.57 (16.09)	68.07 (17.39)	56.40 (19.95)	65.64 (19.90)
100 = Partner respected	68.83 (21.60)	67.14 (21.55)	60.36 (25.39)	55.20 (17.79)**	65.14 (17.03)
100 = Partner is knowledgeable	67.50 (17.97)	62.50 (20.16)	64.21 (17.29)	56.27 (17.75)*	67.50 (21.10)
100 = Partner is high status	61.25 (21.09)	56.43 (22.51)	61.00 (19.82)	51.53 (23.03) †	54.93 (20.75)
100 = Partner is a leader	50.92 (18.59)	58.50 (20.44)	61.14 (17.12)	53.93 (15.70)	55.00 (25.08)
100 = Partner is capable	60.83 (27.19)	75.29 (16.60)	71.14 (19.01)	63.00 (21.10)	76.21 (17.25)
100 = Partner worked hard on the task	59.42 (22.66)	77.79 (16.57)	74.07 (22.25)	63.40 (18.13)	84.57 (12.51)

*** = Significantly different from Control in the predicted direction with a t-test producing a one-tailed $p < .001$

** = Significantly different from Control in the predicted direction with a t-test producing a one-tailed $p < .01$

* = Significantly different from Control in the predicted direction with a t-test producing a one-tailed $p < .05$

† = Significantly different from Control in the predicted direction with a t-test producing a one-tailed $p < .10$

While participants in the GAD and schizophrenia conditions did not attribute lower status (at $p < .05$) for any of the other status measures, participants in the MDD and ADHD conditions did in some cases. Both those in the MDD condition and those in the ADHD condition believed that their groups performed, on average, worse than participants in the control group (50.93 and 53.33 vs. 62.33 out of 100, $p < .05$). Additionally, those in the ADHD condition rated their partners as less respected (55.20 vs. 68.83 out of 100, $p < .01$) and less knowledgeable (56.27 vs. 67.50 out of 100, $p < .05$) than participants in the control condition rated their partners.

Hypothesis 3a posited that participants would attribute the highest stigma to task partners identified as having schizophrenia. Table 2 reveals no support for greatest stigma in the schizophrenia condition, as no estimates reached significance. Hypothesis 3b postulated that participants would attribute the lowest status to task partners identified as having schizophrenia. Table 3 reveals no support for lowest status in the schizophrenia condition.

Hypothesis 4 suggested that, except in the control condition, participants would attribute the least stigma and most status to partners identified as having been diagnosed with generalized anxiety disorder. Table 2 reveals no support for lowest stigma (outside of the control condition) in the GAD condition, as no estimates reached

significance. Table 3 reveals no support for most status (outside of the control condition) in the GAD condition.

Overall, participants with partners presented as having mental disorders did not evaluate their partners more negatively than participants in the control group evaluated their partners. This was particularly true in the case of stigma outcomes wherein the only significant finding in the expected direction was that participants in the ADHD condition viewed their partners, on average, as less pleasant than participants in the control group viewed their partners. However, in terms of status perceptions, participants in the ADHD condition negatively evaluated their partners on four indicators: they changed their answers more frequently, saw their group as performing less well, and perceived their partners as less respected and less knowledgeable.

2.5 Discussion

To the author's knowledge, this study is the first to gauge stigma and status perceptions of a partner in a task performance scenario on the basis of specific mental disorder labels. Its results reveal certain unexpected trends. Prior research on mental health stigma would suggest that participants would view a partner's mental disorder as "deeply discrediting," perhaps representing a "[blemish] of character" (Goffman 1963:3). However, of the 4 disorders considered (GAD, MDD, ADHD, and Schizophrenia), only 1 produced a significant, stigmatized attribution, and, even then,

on only one variable; specifically, the average participant viewed the average partner with ADHD as less pleasant than participants in the control condition viewed their partners.

This unexpected pattern of findings may have resulted from the way in which mental disorders were represented in the study. Lucas and Phelan (2012), using similar experimental procedures to this study, found significant evidence for stigmatization of persons with mental illness. However, when they considered perceptions of mental illness, they represented partners as having been previously hospitalized for 12 months for psychological problems. Participants in the present study never met partners face to face or even directly spoke with them (meaning that there were no behavioral cues of mental illness available to gauge severity). Thus, participants in the present study may have assumed their partners to be higher-functioning than they would have if partners were described as having been hospitalized for a lengthy period of time for their conditions. It is possible that, when access to behavioral indicators is absent, mental illness only functions as a status characteristic and is stigmatized in task situations when it is perceived as very severe.

Status characteristics theory and research considering mental illness as a status characteristic would suggest that mental disorder labels would trigger differential perceptions of status both between those not identified as having a mental disorder and

those who were so identified and across diagnosis types (e.g., Lucas and Phelan 2012; Hopcroft 2002; Webster, Jr. and Hysom 1998; Wagner and Berger 1993; Eagly et al. 1992; Carli 1991 Hopcroft 2002; Webster, Jr. and Hysom 1998; Wagner and Berger 1993; Eagly et al. 1992; Carli 1991). Evidence of these presumptions was mixed in the present study. On the one hand, partners represented as having MDD or ADHD had significantly less influence on participants; out of 25 opportunities, participants changed their answers, on average, 10.42 times in the control group as compared with 8.64 times ($p < .05$) in the MDD condition and 8.40 times ($p < .05$) in the ADHD condition. In addition, while the group was seen as performing less well when the partner had MDD or ADHD than when the partner was not represented as having a mental disorder. Further, partners with ADHD were seen as less respected and less knowledgeable. On the other hand, partners with GAD and Schizophrenia were not viewed significantly more negatively for any status outcome.

Why did ADHD status trigger the highest number of negative status attributions? ADHD's symptomatology could reasonably be seen as directly detrimental to the task performed in this study even if of low severity. Participants may have trusted the partner's input less in the ADHD condition, because the rectangles in the contrast sensitivity problems only appeared on-screen for a brief period of time before the computer program requested an answer. Only brief inattention would have been

necessary to miss the prompt for a problem entirely. This explanation is consistent with participants' statements during the de-briefing process. Participants were asked whether they had ever heard of any stereotypes about each disorder tested in the study, and, if so, what those stereotypes were and which of those stereotypes they believed. Of the 15 participants in the ADHD condition for the final analyses, 10 believed that people with ADHD had trouble paying attention, and, of those 10, 4 suggested that people with ADHD are incapable of ever paying attention, while 2 argued that they were less intelligent than people without ADHD. One participant specifically tied inattention to task performance, arguing that people with ADHD were "not very good at tasks, because they don't pay attention."

Participants also may have viewed persons with ADHD negatively on some status indicators because of their greater familiarity with the disorder. Each participant was asked in the post-study debriefing questionnaire about whether he or she knew someone with GAD, MDD, ADHD, or schizophrenia. In the ADHD condition, 12 of the 15 participants indicated that they knew someone with ADHD. In contrast, participants in the other non-control conditions knew someone with the disorder their partner supposedly had at rates of 5/14 for GAD, 8/14 for MDD, and 4/14 for schizophrenia. Note that more participants in the MDD condition knew someone with their partner's disorder than did participants for any other non-control condition, suggesting that

familiarity with the disorder also may have fueled the negative status attributions directed at partners presumed to have MDD.

More work is necessary to understand whether negative attributions based on mental illness in task scenarios are partially a product of severity (e.g., hospitalization or no history of hospitalization), task relevance (of which the evidence of attributions toward ADHD in this study is suggestive), or familiarity (as potentially suggested by the difference in the number of people who knew someone with the disorder their partner supposedly had between the disorders with at least one negative stigma or status evaluation (MDD and ADHD) and those without any significant, negative evaluations). Nevertheless, this study does provide partial evidence that MDD and ADHD may function as status characteristics differentiated from a status of not having a recognized mental disorder.

3. Our Own Worst Enemies: How Mental Disorder Labels Alter Task Performance (Study 2)

People with mental illness often experience great difficulty in their vocational pursuits. More working-age adults with psychiatric illnesses receive Supplemental Security Income (34%) or Social Security Disability Insurance (27%) than their counterparts in any other diagnostic categories (McAlpine and Warner 2002). Further, national surveys indicate that the percentage of employed among those with a mental illness may be as low as 44% (McAlpine and Warner 2002). One factor obstructing the vocational success of the mentally ill is educational attainment (Freudenberg and Ruglis 2007). The mentally ill are less likely to graduate from primary school, graduate from high school, enter college, and graduate from college (Breslau et al. 2008). Widening the lens further, educational attainment itself often requires adequate performance on standardized tests. Given the importance of test-taking to educational attainment, and educational attainment's positive relationship with vocational success and income, understanding the potential influence of mental illness stigmatization on test-taking may be important to understanding mental illness-based stratification (U. S. Census Bureau 2009).

There are at least two possibilities by which mental illness stigma may negatively impact test-taking performance. First, mental illness symptomatology plays a role in

work skills and vocational prospects and, therefore, likely also impacts test-taking success by distracting from the questions at hand (Anthony et al. 1995). Equally important, however, may be the pernicious effects of internalized stigma. In addition to suffering from the external barriers imposed by stigmatizers via status loss and discrimination, the stigmatized may, in response, erect their own impediments by taking negative perceptions of themselves to heart (e.g., Hinshaw 2007; Link and Phelan 2001).

Stereotypes, or beliefs characterizing groups which overlook individual differentiation, and their associated stigmatizing attributions may become accepted as personally applicable.¹ When this occurs, internalized stigma or “self-stigma” arises (Drapalski et al. 2013:264; Hinshaw 2007). Modified labeling theory suggests that when a person is diagnosed with a mental disorder, the negative cultural perceptions of that disorder become accepted as personally relevant. Among the mentally ill, this is not even dependent on symptom severity (Kroska and Harkness 2008). The consequences of self-stigma among the mentally ill are serious, including diminished hope, lower self-esteem, lower self-efficacy, avoidant coping, and more severe psychiatric symptoms (Drapalski et al. 2013). This study considers whether self-stigma may also negatively impact the mentally ill by diminishing their test-taking abilities. Specifically, this study

¹ However, Steele (2010) argues that personal applicability is not necessary for stereotype threat to take hold. It is enough to simply be a member of a stigmatized group and have exposure to stereotypes about that group.

considers whether stereotype threat invoked on the basis of a mental illness label hinders performance on a standardized test.

3.1 Theoretical Background

3.1.1 Stereotype Threat

Claude Steele describes stereotype threat as the fear of confirming a stereotype about a personally-relevant group identification. It is “a situational threat...that, in general form, can affect the members of any group about whom a negative stereotype exists” (Steele 1997:614). It manifests itself in domains where threatening negative stereotypes are relevant to the affected persons and, through distraction, self-consciousness, and related issues, can result in diminished performance on a variety of tasks (Croizet and Claire 1998). Stereotype threat can induce powerfully negative effects. Those affected by it often experience social and material disadvantage and have difficulty achieving their goals as a result of their underperformance (Hogg 2003). Stereotype threat may then lead to “disidentification” or “a reconceptualization of the self and of one’s values so as to remove the domain [in which stereotype threat is produced] as a self-identity, as a basis of self-evaluation” as a means of diffusing the negativity brought on the belabored struggle to succeed (Steele 1997:614). Such disidentification can motivate withdrawal from educational and occupational opportunities.

Steele and Aronson (1995) first identified stereotype threat in a series of experiments in which they administered the Verbal section of the General Record Exam (GRE) to African-American and white college students. Controlling for self-reported previous performance on the Scholastic Aptitude Test (SAT), when researchers described the test questions as measuring intellect, African-American students achieved lower scores than white students. However, when researchers described performance on the test as non-indicative of ability, score averages converged between the two groups (Steele and Aronson 1995).

Concern over confirming negative stereotypes about African-Americans' underperformance on standardized tests motivated the African-American test-takers to actively avoid underperforming themselves. Yet, the pressure of overcoming these stereotypes proved distracting and actually led to underperformance itself; specifically, African-American test-takers answered fewer items in more time with less accuracy than white students when the test was framed as evaluative of ability. Steele and Aronson (1995) further found that a test need not even be diagnostic of ability in order to trigger stereotype threat; all that was necessary to trigger stereotype threat among African-American test-takers was to ask them to self-identify their racial/ethnic background prior to answering test questions.

Building on Steele and Aronson's (1995) work, later studies noted the impact of stereotype threat outside of the realm of academic-oriented test-taking among diverse sociodemographic groups. Stone and colleagues (1999) found that black participants performed worse on a golf task when it was presented as indicative of sports intelligence. However, when the golf task was presented as indicative of natural athletic ability, white participants fared worse. Also, when faced with the stereotype of being racist, whites distanced themselves from blacks in the study regardless of their explicit or implicit prejudices (Goff, Steele, and Davies 2008). Regarding gender, Leyens and colleagues (2000) found that men performed worse than women on affective tasks when they were described as a way to understand gender differences in processing affective information than when they were not. Similarly, men achieved lower scores than women on a test when it was described as measuring social sensitivity than when it was presented as a test of complex information processing (Koenig and Eagly 2005). Additionally, women's performance in online chess diminished dramatically when gender stereotypes were activated and they were told that they were playing against men (Maass et al. 2008). Finally, older adults faced with negative cultural beliefs about how memory deteriorates with age performed worse on memory tasks (Hess et al. 2003).

Although studies of stereotype threat have involved a variety of activities, academic-oriented test-taking remains one of the central domains in which researchers

address the possible presence of the phenomenon. Regarding race, Blascovich and colleagues (2001) found that African Americans performed worse on difficult questions from the Remote Associates Test under conditions of stereotype threat; moreover, those who experienced stereotype threat experienced greater increases in mean arterial blood pressure while taking the test. Mayer and Hanges (2003) determined that African Americans obtained lower scores on the Raven Advanced Progressive Matrices test (a test deliberately designed to be culture-free) when told that the test measured intelligence. Further, racial/ethnic-based stereotype threat depressed West Indians' performance on GRE questions (Deaux et al. 2007). Other researchers discovered that when whites were reminded of the stereotype that Asians were better at math, they underperformed on challenging math tests (Aronson et al. 1999). Bridging race and gender, Gonzales, Blanton, and Williams (2002) found that stereotype threat negatively impacted Latinas' test-taking performance.

A number of other characteristics have been identified as bases for stereotype threat via test-taking manipulations. One is gender; researchers have found that stereotype threat diminishes women's performance on difficult math tests, particularly among women with high stigma consciousness (Brown and Pinel 2003; Davies et al. 2002; O'Brien and Crandall 2003; Spencer, Steele, and Quinn 1999). Another is socioeconomic status; Croizet and Claire (1998) found that low SES participants

performed worse than high SES participants on a test comprised of questions similar to those on the GRE when the questions were described as indicative of intellectual ability. Later, Spencer and Castano (2007) found that when a test composed of GRE questions was presented as a test of intelligence or when socioeconomic status was made salient, low socioeconomic status students underperformed.

These bases for stereotype threat may only be scratching the surface; Steele (1997:614) argues that stereotype threat could “affect the members of any group about whom a negative stereotype exists (e. g., skateboarders, older adults, White men, gang members).” Social scientists have largely overlooked the potential impact of stereotype threat on adults labeled with stigmatizing mental disorders.

To the author’s knowledge, only one study has considered the role of mental illness as a basis for stereotype threat. Diverging from previous stereotype threat research (which primarily focused on visible stigmas) Quinn, Kahng, and Crocker (2004) considered whether being asked about concealable stigmas (specifically mental illnesses) would impact performance on GRE questions. In one experiment, they pre-screened participants for mental health history via three questions and then, at the study, provided participants with a demographic questionnaire to complete which either included the same mental health screening questions or did not. During the experiment, participants completed GRE questions, and the researchers compared across participants

with and without a history of mental illness who did or did not answer questions about their mental health history during the study. They found that participants who revealed a history of mental illness (regardless of specific diagnosis) performed significantly worse on GRE questions than those who had a history of mental illness but did not reveal it.

In follow-up experiments, Quinn and colleagues (2004) also found: 1) evidence that participants previously treated for depression performed worse on GRE questions after revealing their mental illness history than participants who had not been treated previously for depression; and 2) that persons with eating disorders (representing a concealable mental disorder assumed by the researchers to not carry the same negative competency connotations in a test-taking situation) did not perform significantly worse when they revealed their disorder than when they did not.

Quinn and colleagues' (2004) work sets a useful foundation for mental illness-based stereotype threat research but suffers from a key limitation. Of mental illnesses, the stereotypes associated with depression and eating disorders have questionable relevance to test-taking, and, in fact, Quinn and colleagues do not directly establish the relevance of stereotypes about either to the test-taking domain. It is possible, then, that the diminished performance found in the case of those who revealed their history of depression resulted not from concern on the part of these participants about confirming

a negative stereotype relevant to the test-taking domain but rather pre-occupation with thinking about a devalued status for reasons unrelated to the test-taking task. The present study contributes to the literature on stereotype threat by exploring whether stereotype threat invoked on the basis of a domain-relevant mental illness—specifically, Attention-Deficit/Hyperactivity Disorder—impedes test-taking performance.

3.1.2 Theoretical Relevance of Adult ADHD to Test-taking and Stereotype Threat

Test-taking among adults with ADHD represents an appropriate realm for the study of stereotype threat, as it is consistent with the conditions under which Steele (1997) suggests that stereotype threat occurs. Adults with ADHD are members of a negatively stereotyped group (Jussim et al. 2000). Although positive framings of ADHD have entered public discussion (Hallowell and Ratey 1995), the disorder's negative aspects are more widely recognized and accepted, lending support to the conceptualization of ADHD as a stigmatized condition (e.g., Wasserstein et al. 2001; Weiss et al. 1999). Research suggests that children associate ADHD with violence and antisocial behavior, and some prefer social distance from their peers with the disorder (Walker et al. 2008). College students express stigmatization toward those with ADHD as well, indicating that they are less academically competent than persons without ADHD (Chew et al. 2009; Canu et al. 2008; Newton 2008). Thus, it is perhaps

unsurprising how Lee Jussim and colleagues argue that “Attention-deficit/hyperactivity disorder (ADHD) probably qualifies as a characterological stigma in Erving Goffman’s (1963) typology,” as “the ADHD label represents a devalued social identity based on flaws in one’s behavior (and, to a lesser extent, personality)” (Jussim et al. 2000:390).

The standardized test-taking process taps directly into the stigmatization of adults with ADHD. Acceptance of negative stereotypes as personally applicable is a precondition for receiving accommodations on Educational Testing Service (ETS) standardized tests such as the Graduate Record Exam (GRE). In order to receive accommodations on such tests, adults with ADHD must demonstrate evidence of long-standing impairment across multiple domains (Educational Testing Service 2008). ETS-acceptable examples of this impairment include making careless mistakes, become distracted by “extraneous stimuli,” and failing to follow instructions, all of which would be salient in a testing environment (Educational Testing Service 2008). Thus, the present study represents a logical framework from which to examine medicalized labeling as a potential basis for stereotype threat.

3.2 Methodology

3.2.1 Participant Selection

Participants were recruited through the Duke Interdisciplinary Initiative in Social Psychology (DIISP) participant pool at Duke University, Duke List (Duke University’s

free classifieds marketplace), Craig's List (an online classified ads and forum site), flyers posted on bulletin boards in public meeting spaces and psychiatric treatment facilities, and through e-mail listservs connected with local ADHD support groups to participate in a test of experimental GRE questions allegedly being considered for inclusion on future GREs. Spencer and colleagues (1999) and O'Brien and Crandall (2003) suggest that stereotype threat does not apply unless the task at hand is difficult. Individuals facing simple tasks may be able to perform them competently even in the face of stereotype threat. The difficulty of the GRE, then, would justify its use in the present experiment to determine the impact of stereotype threat on adults with ADHD's test-taking performance. In addition to the GRE being an arguably difficult test in and of itself, a higher percentage of difficult questions were included among those asked in the study than would be the case in an actual administration of the GRE so as to increase the difficulty of the test-taking situation further.

Additionally, given that one of the conditions that Steele (1997) identifies as necessary for the emergence of stereotype threat is domain relevance, efforts were made to recruit current or recent students. Utilizing Duke University outlets for recruitment (such as the Duke Interdisciplinary Initiative in Social Psychology participant pool and Duke's free classifieds marketplace, Duke List) increased the likelihood that participants would be current or recent students. Current or recent students would likely have taken

either the American College Test (ACT) or the SAT Reasoning Test (SAT) in recent years and could also be interested in taking other standardized tests required for professional school admissions, so the standardized test-taking domain would likely be significant to them. Additionally, a standardized test-taking domain may be important to participants—regardless of student status—simply because of the way in which standardized tests have historically been presented as measurements of aptitude (Sacks 2001).

Participants took an online pre-study demographic questionnaire which included the following question: “Do you have any mental health disorder(s) or learning disability/disabilities which could make answering test questions more difficult, such as dyslexia, Attention Deficit Disorder (ADD), Attention Deficit/Hyperactivity Disorder (ADHD) or Autism? (You are still welcome to participate in the study if you do).” Answer choices included: Attention Deficit/Hyperactivity Disorder (ADHD/ADD), Autism, Dyslexia, Other mental health disorders or learning disabilities which could interfere with test-taking or learning (please specify), and None. This made it possible to indirectly distinguish between participants who had ADHD and participants who did not.

An alternative version of the recruitment text specifically mentioning that researchers were interested in recruiting participants with ADHD, since new potential

GRE questions are rarely tested with participants with ADHD, was also circulated after at least 30 participants had been recruited for each non-ADHD condition. This facilitated direct recruitment of participants with ADHD. Additionally, the study was initially restricted to current students but then expanded to a broader population given the difficulty of recruiting only ADHD-affected participants who were current students in sufficient numbers. Most of the participants with ADHD (30 out of 56) were, nevertheless, current students. Recruitment yielded a total of 114 participants (see Table 4).

3.2.2 Procedures

All procedures took place in the DIISP lab of the Social Science Research Institute (SSRI) at Duke University, and each participant completed the procedures in isolation to avoid confounding factors associated with multiple test-takers being in the testing room simultaneously. After filling out an informed consent form, each participant with ADHD was either randomly assigned to the first or second condition, while each participant without ADHD was randomly assigned to either the third or fourth condition (see Table 4).

Table 4: Study 2 Experimental Conditions (Number of Participants)

<u>Condition 1 (26)</u>	<u>Condition 2 (27)</u>	<u>Condition 3 (31)</u>	<u>Condition 4 (30)</u>
Only participants with ADHD	Only participants with ADHD	Only participants without ADHD	Only participants without ADHD
No explicit invocation of stereotype threat	Explicit invocation of stereotype threat	No explicit invocation of stereotype threat	Explicit invocation of stereotype threat

Those assigned to Condition 1 were led to a testing room and administered printed instructions, GRE standardized test questions, and bubble sheets on which to record answers as well as scratch paper. The test questions were divided into two sections: 1) a section containing 15 verbal questions from the GRE and 2) a section containing 14 quantitative questions from the GRE. For both sections of the test, questions came from the most recent GRE General Test preparation book released by the ETS (Educational Testing Service 2002). For the verbal section, I covered the breadth of question types by selecting 3 fill-in-the-blank questions, 4 analogy questions, 4 reading comprehension questions, and 4 antonym questions from previous GRE test GR92-1. For the quantitative section, I covered the breadth of question types by selecting 7 questions in which information is supplied and the test-taker is asked to indicate whether the value in column A is greater, the value in column B is greater, the two values are equal, or the relationship cannot be determined from the information given

and 7 questions which the test-taker is instructed to answer by choosing one possibility from among 5 answer choices. As with the verbal questions, these questions came from previous GRE test GR92-1 (Educational Testing Service 2002). Using data from three years of these questions' administration, I determined the difficulty of questions for each section of GRE test GR92-1. For the present study's verbal section, I selected 5 answered correctly by 28% or fewer of test-takers, 4 answered correctly by between 29% and 49% of test-takers, 3 answered correctly by between 50 and 74% of test-takers, and 3 answered correctly by between 75% and 100% of test-takers (Educational Testing Service 2002). For the quantitative section of the present study, I selected 5 questions answered correctly by 33% or fewer test-takers, 4 questions answered correctly by between 34% and 49% of test-takers, 3 questions answered correctly by between 50% and 74% of test-takers, and 2 questions answered correctly by between 75% and 100% of test-takers. The emphasis on more difficult questions was intended to make the test-taking situation itself difficult enough for stereotype threat to be relevant, though some easier questions were included to ensure greater variance among test-takers' scores (Spencer et al. 1999; O'Brien and Crandall 2003).

Participants were given 15 minutes to complete the verbal section (representing an equivalent amount of time for each question to that given in a normal administration of a verbal GRE section) and 22 minutes and 30 seconds to complete the quantitative

section (representing an equivalent amount of time for each question to that given in a normal administration of a quantitative GRE section) with no break allowed between the sections. No time left over from the first section carried over to the second section. The verbal section was administered first. After the allotted time for the verbal section has passed, the experimenter collected the materials associated with the verbal section and administered printed materials associated with the quantitative section.

Once the participant completed all of the above components of the experiment, the experimenter went to another room briefly to calculate the number and percentage of answers which the participant answered correctly for each section and overall. The experimenter provided this percentage to the participant as knowledge of it was relevant to the post-study questionnaire. Finally, the participant was asked to complete a diagnosis questionnaire containing questions regarding diagnosis type, medication usage, and symptomatology and a post-study questionnaire. The post-study questionnaire provided a funnel debriefing and also asked about the importance of the experimental GRE test that participants took.

A participant assigned to Condition 2 completed the procedures as specified for Condition 1 with one key exceptions; stereotype threat was directly invoked. The participant in Condition 2 was informed that, based on information provided in the pre-study recruitment survey, it was understood that he or she had ADHD. Then, the

experimenter invoked stereotype threat by having the participant complete a screener containing questions based on the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) criteria for ADHD as well as questions regarding diagnosis type and medication usage (a form not administered until after completion of the GRE questions in Condition 1) and warning the participant that people with ADHD typically score much lower on the questions than persons who did not have ADHD. Mentioning to participants that members of a group they belong to do not perform as well on a task as members of other groups is a well-tested means of invoking stereotype threat (Spencer et al. 1999).

A participant assigned to Condition 3 followed the same procedures as specified for participants in Condition 1. Participants in Condition 4 followed the same procedures as participants in Condition 2 with an important exception: given their lack of ADHD status, participants in Condition 4 were not told that experimenters knew that they had ADHD based on their pre-study questionnaires. Persons without ADHD would not necessarily be expected to view failure to remember directions, focus on question wording, or keep one's attention on the test or a warning that persons with ADHD might have difficulty completing the test as relevant to a stereotype about one of their stigmatized group memberships. However, some studies of stereotype threat have revealed that persons exposed to procedures designed to invoke stereotype threat on the

basis of a given stereotype may experience diminished performance even when that stereotype is not personally applicable (Wheeler and Petty 2001). Thus, this experiment provided an opportunity to examine whether performance was more greatly diminished among those specifically exposed to stereotype threat on the basis of a medicalized label if the stereotype invoked was personally-applicable.

3.3 Hypotheses

A number of ADHD symptoms have the potential to negatively impact test-taking performance, including difficulty getting started on tasks that require a lot of thought, trouble concentrating on work that is boring or repetitive, and a tendency to feel restless or fidgety. Thus, I hypothesize that:

Hypothesis 1: On average, participants with ADHD (Conditions 1 and 2) will achieve lower scores on GRE questions than participants without ADHD (Conditions 3 and 4).

Stereotype threat has already been shown to negatively impact test-taking performance among members of a number of stigmatized groups (Deaux et al. 2007; Mayer and Hanges 2003; O'Brien and Crandall 2003; Gonzales et al. 2002; Blascovich et al. 2001; Quinn and Spencer 2001; Spencer et al. 1999). Given that ADHD fits the scope conditions for stereotype threat coupled with Steele's predictions that stereotype threat

could emerge among members of any group subject to negative stereotypes (Steele 1997), I hypothesize that:

Hypothesis 2: Among participants with ADHD, those explicitly exposed to stereotype threat (Condition 2) will obtain lower average scores on GRE questions than those not explicitly exposed to stereotype threat (Condition 1).

People with ADHD are expected to suffer the additional pressure of being in a stereotype threat situation, where the label that has been applied to them (and they have accepted) implies poorer performance in a domain-relevant, difficult performance situation. In contrast, people without ADHD exposed to stereotype threat based on ADHD should be unaffected, as the label does not apply to them.

Therefore, I hypothesize that:

Hypothesis 3: Participants with ADHD who are explicitly exposed to stereotype threat (Condition 2) will obtain lower average scores on GRE questions than participants without ADHD explicitly exposed to ADHD-based stereotype threat (Condition 4).

Thus, in general, it is hypothesized that the highest score averages will come from respondents who are not diagnosed with ADHD and for whom stereotype threat is not explicitly invoked, and the lowest score average will come from participants diagnosed with ADHD and for whom stereotype threat is explicitly invoked.

3.4 Results

3.4.1 Sample

The full sample consisted of 114 participants. Table 5 provides descriptive statistics for the sample used in the study's analyses:

Table 5: Study 2 Sample Descriptive Statistics

	Full Sample (n = 114)		ADHD Participants (n = 53)		Non-ADHD Participants (n = 61)	
	<i>Mean/ Proportion</i>	<i>Standard Deviation</i>	<i>Mean/ Proportion</i>	<i>Standard Deviation</i>	<i>Mean/ Proportion</i>	<i>Standard Deviation</i>
Age	25.31	7.31	28.51	8.54	22.52	4.51
Female	.6053	.4910	.5472	.5025	.6557	.4791
<u>Race</u>						
White	.5263	.5015	.6792	.4712	.3934	.4926
Black/African American	.1754	.3820	.1887	.3950	.1639	.3733
Asian	.1842	.3894	.0377	.1924	.3115	.4669
Multiracial	.0789	.2708	.0566	.2333	.0984	.3003
Other	.0263	.1608	.0377	.1924	.0164	.1280
Hispanic	.0614	.2411	.0566	.2333	.0656	.2496
<u>Education</u>						
Less than High School Diploma	.0088	.0937	.0189	.1374	0.000	0.000
High School Diploma/GED	.1140	.3193	.0377	.1924	.1803	.3877
Some College/Vocational School	.5263	.5015	.5660	.5004	.4918	.5041
Bachelor's Degree	.1667	.3743	.2264	.4225	.1148	.3214
Some Graduate School	.0702	.2566	.0377	.1924	.0984	.3003
Graduate or Professional Degree	.1140	.3193	.1132	.3199	.1148	.3214
<u>Importance of Obtaining a High Score the GRE Test</u>						
Very important	.0965	.2966	.1698	.3791	.0328	.1796
Somewhat important	.4298	.4972	.4528	.5025	.4098	.4959
Neither important nor unimportant	.3596	.4820	.3208	.4712	.3934	.4926
Somewhat unimportant	.0439	.2057	0.000	0.000	.0820	.2766
Not important at all	.0702	.2566	.0566	.2333	.0820	.2766
<u>Experimental Condition</u>						
1- ADHD/No Stereotype Threat	.2281	.4214	.4906	.5047		
2- ADHD/Stereotype Threat	.2368	.4270	.5094	.5047		
3- No ADHD/No Stereotype Threat	.2719	.4469			.5082	.5041
4- No ADHD/Stereotype Threat	.2632	.4423			.4918	.5041

On average, participants were approximately 25 years of age, with about 61% being women and 39% being men. Regarding race and ethnicity, approximately 53% identified as white, 18% black or African American, 18% Asian, 8% multiracial, and 3% some other race, with about 6% of participants identifying as Hispanic. Approximately 1% of participants had less than a high school diploma, while approximately 11% has a high school diploma or GED, 53% had completed some college or vocational school, 17% had a bachelor's degree, 7% had completed some graduate school, and 11% had a graduate or professional degree. Participants were fairly evenly distributed into experimental conditions, with approximately 23% in Condition 1 (ADHD, no stereotype threat), 24% in Condition 2 (ADHD, stereotype threat), 27% in Condition 3 (no ADHD, no stereotype threat), and 26% in Condition 4 (no ADHD, stereotype threat).

Compared with Non-ADHD participants, ADHD participants were approximately 6 years older on average (28.51 vs. 22.52). A smaller percentage of ADHD participants were female than non ADHD participants (approximately 55% vs. 66%). Regarding race, compared with non-ADHD participants, there were substantially more white ADHD participants (approximately 68% vs. 39%), slightly more black/African-American participants (approximately 19% vs. 16%), substantially fewer Asian participants (approximately 4% vs. 31%), slightly fewer multiracial participants (approximately 6% vs. 10%), and slightly more participants who identified themselves as being of some other race (approximately 4% vs. 2%). As for ethnicity, slightly fewer

ADHD participants identified as Hispanic (approximately 6% vs. 7%). Finally, regarding education, slightly more ADHD participants had less than a high school diploma (2% vs. 0%), substantially fewer had a high school diploma or GED (4% vs. 18%), more had attended some college or a vocational school (57% vs. 49%), substantially more had a bachelor's degree (23% vs. 11%), fewer had attended some graduate school (4% vs. 10%), and a similar percentage had completed a graduate or professional degree (11% vs. 11%).

To determine relevance of the test-taking procedure to the participants, after completion of the study participants answered the question (among other post-study questions) of how important achieving a high score on the experimental GRE questions used in the study was to them. Of the participants with ADHD, 9 (17%) indicated that it was very important, 24 (45%) somewhat important, 17 (32%) neither important nor unimportant, 0 (0%) somewhat unimportant, and 3 (6%) not important at all. Thus, most ADHD participants cared about doing well on the GRE questions. (In comparison, of participants without ADHD, 2 (3%) indicated that it was very important, 25 (41%) somewhat important, 24 (39%) neither important nor unimportant, 5 (8%) somewhat unimportant, and 5 (8%) not important at all.)

3.4.2 Analyses

Table 6 provides mean scores for the verbal and quantitative GRE sections. On the verbal section, participants with ADHD who were not exposed to stereotype threat

had the lowest average score (Condition 1, 6.62 out of 15), followed by participants with ADHD exposed to stereotype threat (Condition 2, 6.81 out of 15), participants without ADHD who were not exposed to stereotype threat (Condition 3, 8.00 out of 15), and participants without ADHD who were exposed to ADHD-based stereotype threat (Condition 4, 8.43 out of 15). On the quantitative section, participants with ADHD who were exposed to stereotype threat had the lowest average score (Condition 2, 4.19 out of 14), followed by participants with ADHD not exposed to stereotype threat (Condition 1, 5.54 out of 14), participants without ADHD who were not exposed to stereotype threat (Condition 3, 8.06 out of 14), and participants without ADHD who were exposed to ADHD-based stereotype threat (Condition 4, 9.43 out of 14).

Table 6: Mean Scores (and Standard Deviations) on GRE sections

	<u>Condition 1</u>	<u>Condition 2</u>	<u>Condition 3</u>	<u>Condition 4</u>	<u>ADHD Participants</u>	<u>Non-ADHD Participants</u>
	-ADHD -No Stereotype Threat	-ADHD -Stereotype Threat	-No ADHD -No Stereotype Threat	-No ADHD -Stereotype Threat		
Verbal	6.62 (3.01)	6.81 (2.65)	8.00 (2.61)	8.43 (2.56)	6.72 (2.80)	8.21 (2.57)
Quantitative	5.54 (3.36)	4.19 (3.52)	8.06 (3.10)	9.43 (3.05)	4.85 (3.48)	8.74 (3.12)

Hypothesis 1 posits that, on average, participants with ADHD will achieve lower scores on GRE questions than participants without ADHD. Table 7 compares ADHD participants with non-ADHD participants on verbal and quantitative GRE scores. Consistent with Hypothesis 1, participants with ADHD achieved significantly lower scores on average than participants without ADHD on the verbal section (6.72 vs. 8.21, $p < .001$) and on the quantitative section (4.85 vs. 8.74, $p < .001$).

Table 7: Comparing ADHD Participants with Non-ADHD Participants: Mean Scores (and Standard Deviations) and Significance Test Results on GRE Sections (n = 114)

	<u>Condition 1</u>	<u>Condition 2</u>	<u>Non-ADHD Participants</u>
	-ADHD	-ADHD	
	-No	-Stereotype	
	Stereotype	Threat	
	Threat		
Verbal	6.62 (3.01)**	6.81 (2.65)**	8.21 (2.57)
Quantitative	5.54 (3.36)***	4.19 (3.52)***	8.74 (3.12)

*** = Significantly different from non-ADHD participants in the predicted direction with a t-test producing a one-tailed $p < .001$

** = Significantly different from non-ADHD participants in the predicted direction with a t-test producing a one-tailed $p < .01$

* = Significantly different from non-ADHD participants in the predicted direction with a t-test producing a one-tailed $p < .05$

Hypothesis 2 postulates that, among participants with ADHD, those who are explicitly exposed to stereotype threat will obtain lower average scores on GRE questions than those not explicitly exposed to stereotype threat. Inconsistent with

Hypothesis 2, Table 8 reveals no significant difference in the average verbal section scores of ADHD participants exposed to stereotype threat (Condition 2, 6.81) and ADHD participants not exposed to stereotype threat (Condition 1, 6.62). However, on average, ADHD-affected participants exposed to stereotype threat (Condition 2) achieved significantly lower scores on the quantitative section (4.19 vs. 5.54, $p < .05$) than ADHD-affected participants who were not exposed to stereotype threat (Condition 1). Thus, the data reveal partial evidence that stereotype threat diminishes test-taking performance among persons with ADHD.

Table 8: Exposure to Stereotype Threat among ADHD Participants: Mean Scores (and Standard Deviations) and Significance Test Results on GRE Sections (n = 53)

	<u>Condition 1</u>	<u>Condition 2</u>
	-ADHD	-ADHD
	-No	-Stereotype
	Stereotype	Threat
	Threat	
Verbal	6.62 (3.01)	6.81 (2.65)
Quantitative	5.54 (3.36)	4.19 (3.52)*

*** = Significantly different from Condition 1 in the predicted direction with a t-test producing a one-tailed $p < .001$

** = Significantly different from Condition 1 participants in the predicted direction with a t-test producing a one-tailed $p < .01$

* = Significantly different from Condition 1 participants in the predicted direction with a t-test producing a one-tailed $p < .05$

Hypothesis 3 conjectures that participants with ADHD who are explicitly exposed to stereotype threat will obtain lower average scores on GRE questions than

participants who have not been diagnosed with ADHD and who are assigned to conditions explicitly designed to invoke stereotype threat in persons with ADHD. Consistent with Hypothesis 3, Table 9 reveals that participants with ADHD who were explicitly exposed to stereotype threat (Condition 2) obtained lower average scores on the verbal section (6.81 vs. 8.43, $p < .001$) and the quantitative section (4.19 vs. 9.43, $p < .001$) than participants without ADHD who were exposed to ADHD-based stereotype threat (Condition 4).

Table 9: Comparing Exposure to Stereotype Threat among ADHD and Non-ADHD Participants: Mean Scores (and Standard Deviations) and Significance Test Results on GRE Sections (n = 57)

	<u>Condition 2</u> -ADHD -Stereotype Threat	<u>Condition 4</u> -No ADHD -Stereotype Threat
Verbal	6.81 (2.65)	8.43 (2.56)***
Quantitative	4.19 (3.52)	9.43 (3.05)***

*** = Significantly different from Condition 2 in the predicted direction with a t-test producing a one-tailed $p < .001$

** = Significantly different from Condition 2 participants in the predicted direction with a t-test producing a one-tailed $p < .01$

* = Significantly different from Condition 2 participants in the predicted direction with a t-test producing a one-tailed $p < .05$

Overall, the evidence suggests that ADHD is negatively associated with verbal and quantitative test-taking performance. Persons with ADHD perform even worse on quantitative questions when exposed to stereotype threat. Finally, the stereotype threat

manipulation only affects those who are predicted to be impacted by it (persons with ADHD) and has no significant negative effect on persons without ADHD.

Given the high education level of the sample, the aforementioned analyses posed the potential to provide a conservative estimate of mental illness-based stereotype threat in the completion of the quantitative GRE section, as ADHD participants may have been particularly high-functioning in this sample. To account for education, two ANOVA tests were conducted with quantitative GRE score as the dependent variable and ADHD (yes or no), stereotype threat (yes or no), and the interaction between ADHD and stereotype threat as independent variables. In the first, no covariates were included. In the second, education was included as a covariate. Consistent with the previous analyses, when education was not included as a covariate, ADHD was significantly associated with quantitative GRE score ($F(1, 104.75) = 9.84, p = .002$). Stereotype threat alone was not significant at the .05 level of significance ($F(1, 28.57) = 2.68, p = .104$), but the effect of the interaction between ADHD and stereotype threat on quantitative GRE score was barely significant ($F(1, 41.90) = 3.94, p = .0498$).

When included, the covariate education was significantly related to quantitative GRE performance ($F(1, 41.26) = 3.98, p = .049$). With education taken into account, results remained consistent with the previous analyses. The significant effect of ADHD on quantitative GRE score ($F(1, 98.16) = 9.47, p = .003$) remained. Stereotype threat alone was only marginally significant at the .05 level of significance ($F(1, 37.57) = 3.62, p = .06$),

but the effect of the interaction between ADHD and stereotype threat on quantitative GRE score remained significant ($F(1, 50.91) = 4.91, p = .029$). With education included as a covariate, the effect of the interaction between ADHD and stereotype threat on quantitative GRE score was actually more significant ($p = .029$ vs. $p = .0498$). (In parallel analyses of verbal GRE performance, with education included as a covariate, the effect of the interaction between ADHD and stereotype threat on verbal GRE score remained insignificant.)

3.5 Discussion

This study is the first to specifically address the role of stereotype threat in test-taking among persons with ADHD. In doing so, it extends stereotype threat research by illuminating whether a domain-relevant mental disorder can serve as a basis for stereotype threat, thereby diminishing test performance. The symptomatology of ADHD is directly relevant to test-taking (as attention and focus are important components of succeeded on standardized test in a timed environment). Further, given ETS' history of providing accommodations on standardized tests for ADHD via an evaluation process that necessitates proof of academic impairment (such as low performance on previous standardized tests), the process of obtaining accommodations during the test registration process itself may invoke stereotype threat that impedes actual test performance. Thus, it is important to understand whether or not stereotype threat is relevant to persons with ADHD.

Consistent with the relevance of ADHD to the test-taking environment, participants in this study with ADHD—regardless of condition—performed at a lower level than persons without ADHD. However, over and above the impact of simply having ADHD, stereotype threat appeared to further impede the performance of persons with ADHD in answering quantitative GRE questions. As with previous research (Quinn et al. 2004), exposure to stereotypes outside of their relevant category (in this case, when non-ADHD participants were exposed to circumstances designed to create stereotype threat in persons with ADHD) did not impede performance.

Previous stereotype threat research indicates a number of possible reasons why those for whom negative stereotypes about ADHD were relevant were affected as they were in completing the quantitative GRE section. Most simply, the threat of confirming negative stereotypes about people with ADHD's ability to perform effectively may have been distracted ADHD-affected participants in the stereotype threat condition from the task at hand (Steele and Aronson 1995). Additionally, those who are exposed to stereotype threat may experience a decrease in positive emotions, which inhibits functioning (Kang and Chasteen 2009). Concern with confirming negative stereotypes may also lead to individuals' self-handicapping; Steele and Aronson (1995) found that African-American participants in stereotype-threat conditions were more likely to report lack of sleep and inability to focus. Although not specifically tested for in this study, certain actions, such as intentionally neglecting to take medication to relieve the

symptoms of ADHD, could function as self-handicapping mechanisms specific to persons with ADHD.

Many other potential mechanisms have either not found evidence or been inconsistently supported. Thus far, evidence has failed to support claims that persons might shut down and exert less effort or put too much effort in and burn-out in response to stereotype threat (Smith 2004). Similarly, evaluation apprehension (or concern by participants that poor performance on the task will lead others to look down on them) and perceptions of the test itself as unfair have failed to garner evidentiary support as mediators (Smith 2004). The evidence regarding anxiety's role as a mediator in the relationship between stereotype threat and performance is mixed; some researchers have found no mediation (e.g., Keller and Dauenheimer 2003; Gonzales et al. 2002), while others have found partial mediation (Osborne 2001). However, other potential mechanisms may have underpinned the impact of stereotype threat evidenced in this study at pre-perceptual or psychophysiological levels (Spenner et al. 2004).

Whatever the relevant mechanism or set of mechanisms, this study reveals that stereotype threat, in addition to impeding performance on so many other bases, has relevance to ADHD. Coupled with existing evidence regarding general mental illness and history of depression as triggers for stereotype threat (Quinn et al. 2004), this study provides confirmatory information suggesting that stereotype threat may pose problems both at the broad conceptual level (pertaining to general stereotypes about mental

illness) and at the diagnosis-specific level (pertaining to particular mental disorder labels). Stereotype threat poses a serious concern, then, for those impacted by mental illness insofar as it impedes test-taking performance, potentially negatively influencing future educational and vocational prospects. This is particularly true given that stereotype threat in specific task situations can have spillover effects, depleting self-control resources needed for other related or unrelated life challenges (Inzlicht et al. 2011).

3.5.1 Limitations

Despite this study's contributions, it is not without limitations. There are a number of reasons why this may represent a conservative test of stereotype threat. First, given the difficulty of recruiting participants with ADHD, 31 of the 53 participants with ADHD (13 in Condition 1, the non-stereotype threat condition and 18 in Condition 2, the stereotype threat condition) were recruited directly using the recruitment text indicating that researchers were looking for participants with ADHD, as such individuals were generally not included in tests of experimental GRE questions. This direct form of recruitment may have resulted in a more conservative test of the difference between the stereotype threat and non-stereotype threat ADHD conditions, as participants in Condition 1 may have been implicitly impacted by stereotype threat through the attention to their disorder raised by the form of recruitment used. Although recruitment was typically detached from actual participation in the study by several days and

emphasis was placed on the study as a test of experimental GRE questions, some participants did refer the study as the “ADHD study” in correspondence. Recruitment using only indirect methods may have yielded stronger support for the presence of stereotype threat based on ADHD status.

Additionally, this may have been a conservative tests of stereotype threat for other reasons. It is possible that ADHD participants in the non-stereotype threat condition experienced some indirect stereotype threat by virtue of the test-taking situation or due to the actual effects of their disorder. Finally, the sample for this study was highly educated on average (both in general and among its ADHD participants specifically). This being the case, the ADHD participants in this sample may have been uncharacteristically high-achieving or have already found ways to at least partially mitigate their test-taking deficits at least enough to successfully enter higher education. A sample with lower education might have yielded a stronger contrast between those ADHD participants who were explicitly exposed to stereotype threat and those who were not.

4. Perception is Everything

“Some colleagues rebelled against the nomenclature change, saying that a vote of hands should not determine psychiatric diagnosis, forgetting that it was a vote of hands that put [a psychiatric diagnosis] on the list of disorders in the first place.” – Charles Silverstein (Silverstein 2009:1).

4.1 Summary

Perception is everything. Take for example, homosexuality. Greek philosopher Plato (2001) suggested that homosexual love represented the purest and highest aspiration. Homosexuality was a mental disorder according to the Diagnostic and Statistical Manual of Mental Disorders II until its 6th printing. Then, in 1973, it was replaced by “sexual orientation disturbance,” which indicated that the real psychiatric condition was not homosexuality itself but rather dissatisfaction and distress stemming from unwanted homosexual feelings and behavior (The American Psychiatric Association 1973). Is homosexuality, then, the pinnacle of human triumph, a deviant mental illness, or a run-of-the-mill part of humanity that can simply be problematic if unwanted by the person experiencing it? The same definitional confusion applies to many sets of behaviors which have at one point or another become labeled as mental illnesses. Who gets labeled as mentally ill and how they are treated is a perceptual

moving target. Yet, despite the subjectivity, labels have real consequences for the labeled.

Life is a series of often-simultaneous opportunities and challenges. For persons with symptomatology consistent with mental illness, that symptomatology may complicate rising to the occasion when opportunity knocks or challenges arise. Even worse, putting a name to the added difficulties of being mentally ill potentially opens one up to scrutiny and scorn. Complicatedly, often the best opportunity for relief from the symptoms that plague the mentally ill is to turn to the modern medical establishment wherein one hand writes the prescriptions while the other heats up the branding iron (Conrad 2007).¹

This dissertation focused on the impact of perceptions of mental illness at two important points along the path of productive adulthood: 1) during the test-taking process (a precursor to academic opportunity and, through academic opportunity, vocational success); and 2) during participation in goal-oriented, group-based activities such as the ones which permeate the modern employment sector. In the latter case, Study 1 extended research in the status characteristics theory tradition to determine how specific mental illness labels (GAD, MDD, ADHD, and schizophrenia) are perceived in work-group situations in terms of stigma and status attributions. In the former case,

¹ This is not to say that the medical establishment intends harm, but a wound inflicted with the best of intentions is still a wound.

Study 2 extended existing work on stereotype threat to a task-relevant mental illness: ADHD.

Despite what previous theorization and empirical evidence on the stigma of mental illness would lead one to expect (e.g., Lucas and Phelan 2012; Wahl 1999; Penn and Martin 1998; Angermeyer and Matschinger 1997; Link 1987; Schur 1971; Becker 1963; Goffman 1963), on average, participants in Study 1 who believed they were working with a partner with mental illness did not choose the same partner at a significantly lower rate than participants in the control condition chose the same partner for future collaboration. Nor did participants who believed they were working with someone with a mental illness indicate that they wanted to work with their partners less, had less in common with their partners, or saw their partners as less considerate, pleasant, powerful, likeable, or cooperative than participants in the control condition indicated about their partners. The one exception was that persons whose partners allegedly had ADHD considered them significantly less pleasant than control condition participants viewed their own partners. Taken together with previous work (Lucas and Phelan 2012), the substantive conclusion is that, while mental illness may prompt stigmatizing perceptions in task-group situations when the severity is high (e.g., mental illness required hospitalization for 12 months), the suggestion that specific mental illness

labels detached from conceptualizations of severity may invite different types of stigmatization is unsupported.

Regarding status attributions, Study 1 provided limited evidence that ADHD and, to a lesser extent, MDD may function as status characteristics differentiated from those who do not have a mental illness label. When given the opportunity to change their answer to that of their partner's answer, participants who believed that their partner had MDD or ADHD changed their answers less often (8.64 times and 8.40 times respectively vs. 10.42 times in the control condition, $p < .05$). Participants with MDD or ADHD-labeled partners also thought their group performed less well than participants in the control group (with scores of 50.93 out of 100 and 53.33 respectively vs. 62.33, $p < .05$). Moreover, participants who believed that their partner had ADHD considered their partner to be less respected (55.20 out of 100 vs. 68.83 in the control condition) and less knowledgeable (56.27 out of 100 vs. 67.50 in the control condition). The most negatively evaluated mental illness label also was the one which was most task relevant, as the problems used for evaluation involved rectangles appearing for a short period of time and then disappearing quickly—something which could have been seen as problematic for a partner with ADHD. Although the clustering of significant, negative status attributions within the ADHD condition may demonstrate the impact of task

relevance in status attribution, the relatively small number of significant findings overall may suggest that the findings for MDD and ADHD are at least partially attributable to chance.

Study 2 provides evidence that the label of ADHD—over and above the symptomatology of the mental illness underlying it—may negatively impact test-taking ability via stereotype threat. Participants with ADHD who were told that persons with ADHD performed worse on GRE questions than those without ADHD prior to answering GRE questions achieved lower scores on quantitative questions than persons with ADHD not exposed to stereotype threat.

Taken together, these findings indicate that perception of mental illness labels is an important component of stigmatization and status attribution but that perception may rely on relevance of the label to the domain in which it is being evaluated. Study 1 showed partial evidence that status attribution may not necessarily arise on the basis of specific mental illness labels if such labels are not domain relevant (given the negative status attributions appearing for ADHD but not as much for MDD and not at all for GAD and schizophrenia). In parallel, Study 2 provided evidence consistent with the argument that internalized perceptions of a domain-relevant disorder (ADHD in a test-

taking situation) can result in a self-stigmatizing process that diminishes scores via stereotype threat.

4.2 Limitations

While Study 1 and Study 2 expand on previous work in useful ways, they are hampered by certain limitations. In Study 1, a large number of participants needed to be excluded from the sample due to either not believing that they were working with real partners or failing to pay sufficient attention during the study (as measured by their encountering a question asking them to respond by moving a slider bar to a specific number and not sliding the bar to that number). This raises questions about who remained in the final sample. Although participants were randomly assigned to conditions, the removal of over half of the participants for the aforementioned data quality issues could be problematic if the remaining participants shared characteristics atypical of the sample overall that might have altered the results. For example, are those who remained the sort of people who were so willing to go along with the experiment that they would also demonstrate social desirability bias more frequently when making stigma and status-based attributions about their partners?

As for Study 2, the need to switch from indirect recruitment of persons with ADHD (by ascertaining their status from a question embedded in a lengthy pre-study questionnaire) to direct recruitment (by asking people with ADHD to participate in the

study) may have made participants think the study was about ADHD and test-taking performance. This may have been the case even though the indirect recruitment text clarified that the attempt to include persons with ADHD was made to increase demographic diversity in a study that was actually about testing experimental GRE questions. Given that simply providing one's race as an African American can diminish test performance (Steele 2010), if some of the participants with ADHD went into the study believing that it was about ADHD, that knowledge may have indirectly cued stereotype threat. If so, then Study 2 would actually represent a rather conservative test of stereotype threat, as there could be some individuals in the non-stereotype threat condition who were negatively impacted in a way that could affect their test performance.

Although these limitations are undesirable, even if large numbers of participants did not need to be eliminated from the analytic sample, the major benefit might arguably have been greater statistical power. That is, given the recruitment strategy for the study, the sample could not have been viewed as representative of the general population. This is also true for Study 2. Thus, the external validity of the two studies would inevitably have been questionable.

4.3 Suggestions for Future Research

This dissertation raises a number of questions worthy of further consideration. Lucas and Phelan's (2012) study focused on perceptions of a partner in a task group

situation thought to have been hospitalized for 12 months for psychological problems, while Study 1 of this dissertation replaced the overly general label of psychological problems with specific illness labels while omitting the severity implied by a lengthy hospitalization. The intermediate scenario has not been explored; what if individuals are told that they are working with partners who have specific mental illness labels like GAD, MDD, ADHD, or schizophrenia, do their stigma and status attributions of the partner change if the severity of the partner's illness is provided? Additionally, it makes sense that, given the task relevance of ADHD in Study 1, there were more negative status characteristics attributed to partners with ADHD. However, this finding requires replication. If the symptomatology of illness labels which did not provoke any negative status attributions (in this case, GAD and schizophrenia) were more relevant to the task, would negative status attributions emerge? (In other words, when mental illness labels are specified, is a given label more likely to be negatively evaluated in a task situation if diagnostically likely to impede group performance?) Finally, previous research and Study 1 do not take into account the potentially mitigating role of medication on perceptions of mental illness. Could knowing that a partner with a task-relevant mental illness was taking medication that was effectively combating his or her symptoms

reduce participants' negative status attributions? These questions require further attention.

Study 2 provides partial evidence that ADHD may function as a basis for stereotype threat. Previous work found that depression can also function in this way, whereas eating disorders did not trigger stereotype threat (Quinn et al. 2004). This is interesting given that other bases of stereotype threat (such as race, gender, and class) have yielded more consistent results across sub-types (e.g., stereotype threat impacts both men and women rather than just one group or the other) (Deaux et al. 2007; Mayer and Hanges 2003; O'Brien and Crandall 2003; Gonzales et al. 2002; Blascovich et al. 2001; Quinn and Spencer 2001; Spencer et al. 1999). The difference in this case may be the relevance of symptomatology to the task. Future research should consider which specific mental illnesses can lead to stereotype threat and what circumstances are necessary for stereotype threat to occur for persons with specific mental illnesses.

Much remains unexplained or insufficiently understood, but of one thing we can be sure; if history is a valid predictor of the future, people will always find a way to categorize each other on the basis of perceptions of normality or abnormality. Medicalization, though important, is but one means of doing so. Regardless of the mechanism by which differentiation occurs, we must better understand and adapt to the

repercussions of putting ourselves in boxes and placing some boxes on top of others whether in pursuit of a job, in furtherance of the activities pursuant to employment, or other important facets of human existence.

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Biography

Steven L. Foy was born on December 18, 1984 in Camp Lejeune, NC. He graduated *magna cum laude* from Emory University in Atlanta, GA in 2007 with a B.A. in sociology and history and received an M.A. in sociology from Duke University in 2009. His publications include: "Psychotropic Medication Claims among Religious Clergy" in *Psychiatric Quarterly* (with Steven M. Frenk, Sarah Mustillo, Whitney D. Arroyave, Elizabeth G. Hooten, Kari H. Lauderback, and Keith G. Meador); and "It's Medically Proven!: Assessing the Dissemination of Religion and Health Research" in the *Journal of Religion and Health* (with Steven M. Frenk and Keith G. Meador). Forthcoming publications include: "Measuring Stress Outcomes" (with Wendy Brynildsen Young and Linda K. George) in the *Wiley-Blackwell Encyclopedia of Health, Illness, Behavior, and Society*; and "The Role of Emotions and Affect in Creating, Reproducing, and Resisting Inequality" (with Robert E. Freeland, Andrew Miles, Kimberly B. Rogers, and Lynn Smith-Lovin) in the *Handbook of the Social Psychology of Inequality*. Steven has been a Preparing Future Faculty fellow, an Anne T. and Robert M. Bass fellow, and the recipient of grants from the National Science Foundation and Duke University. Next fall, he will be an assistant professor in the Department of Sociology and Anthropology at the University of Texas-Pan American.